PORSF
11.3.214.1
6/16/08

89-92

USEPA SF
1306538

CROSBY & OVERTON, INC.

5420 N. LAGOON
PORTLAND, OREGON 97217
283-1150 or 289-5749

HEAVY DUTY CLEANING

24 HOUR SERVICE

P.O. BOX 1085
20245 76th
SOUTH KENT, WA 98031

DECOMMISSIONING ACTIVITIES REPORT
PACIFIC DETROIT DIESEL
PORTLAND, OREGON

Prepared by:

Gary Renforth
Hazardous Materials Supervisor
Crosby & Overton, Inc.
Portland, Oregon

June 15, 1989

Reviewed by

Introduction:

On May 17, 1989, Marvin Pierce, Service Support Manager for Pacific Detroit Diesel, signed a Crosby & Overton work order to commence decommissioning activities on four (4) known tanks and two (2) unknown underground storage tanks. The tanks were designated as tanks number one through six and they had all previously contained petroleum products, which was gasoline, diesel fuel and waste oil. The tank sizes were three 1,000 gallon, one 10,000 gallon, one 8,000 gallon and one 3,000 gallon. The storage tanks were to be decommissioned to comply with Department of Environmental Quality rules governing underground storage tanks.

Product Procedures:

On May 17, 1989, Crosby & Overton, Inc., submitted a permanent decommissioning application to the Department of Environmental Quality's underground storage tank department to comply to Oregon's D.E.Q. and the E.P.A. (Environmental Protection Agency) laws prior to commencing to decommissioning activities (see attached application).

On May 22, 1989, Crosby & Overton contacted Portland's Fire Marshall to inform him that decommissioning activities were going to take place on six (6) underground storage tanks located at Pacific Detroit Diesel Allison, 5940 North Basin, Portland, Oregon. A fire marshall's permit then was issued to commence decommissioning activities (see attached permit).

On May 23, 1989, Crosby & Overton arrived on site to begin decommissioning activities on the underground storage tanks. First all remaining product was removed from the tanks then the tanks were triple rinsed using a Landa Steam Machine and vacuum truck. A Pneumatic Blower than reduced the L.E.L. (lower explosion limit) to below 10% as indicated by "Gasteh" instrumentation..

On May 23, 1989 the tanks were removed one by one. Upon removing the tanks a composite soil sample was drawn from each tank location. The samples then were sent to a certified laboratory for analytical evaluation for the following: UST 1 and 2 TPH, PCB, Cadmium, Chromium, Lead, Flashpoint and Chlorinated organic. The following test were performed on UST's 3,4,5,6: Benzene, Toluene, Ethyl Benzene, Xylene, Gas and TPH. An additional tox was analyzed on sample No. 5 (see attached analysis). Once the tanks were inerted and removed the ends of the tanks were cut out, then the tanks were loaded on a flat bed and hauled to Schnitzer Steel for recycling (see attached receipts). The product and rinsate that was pumped from the tanks by vacuum truck was transported to Fuel Processors Inc. for recycling (see attached receipts).

Remedial Activities:

Upon removal of the underground storage tanks it was quite noticeable through sight and smell that the tanks had been

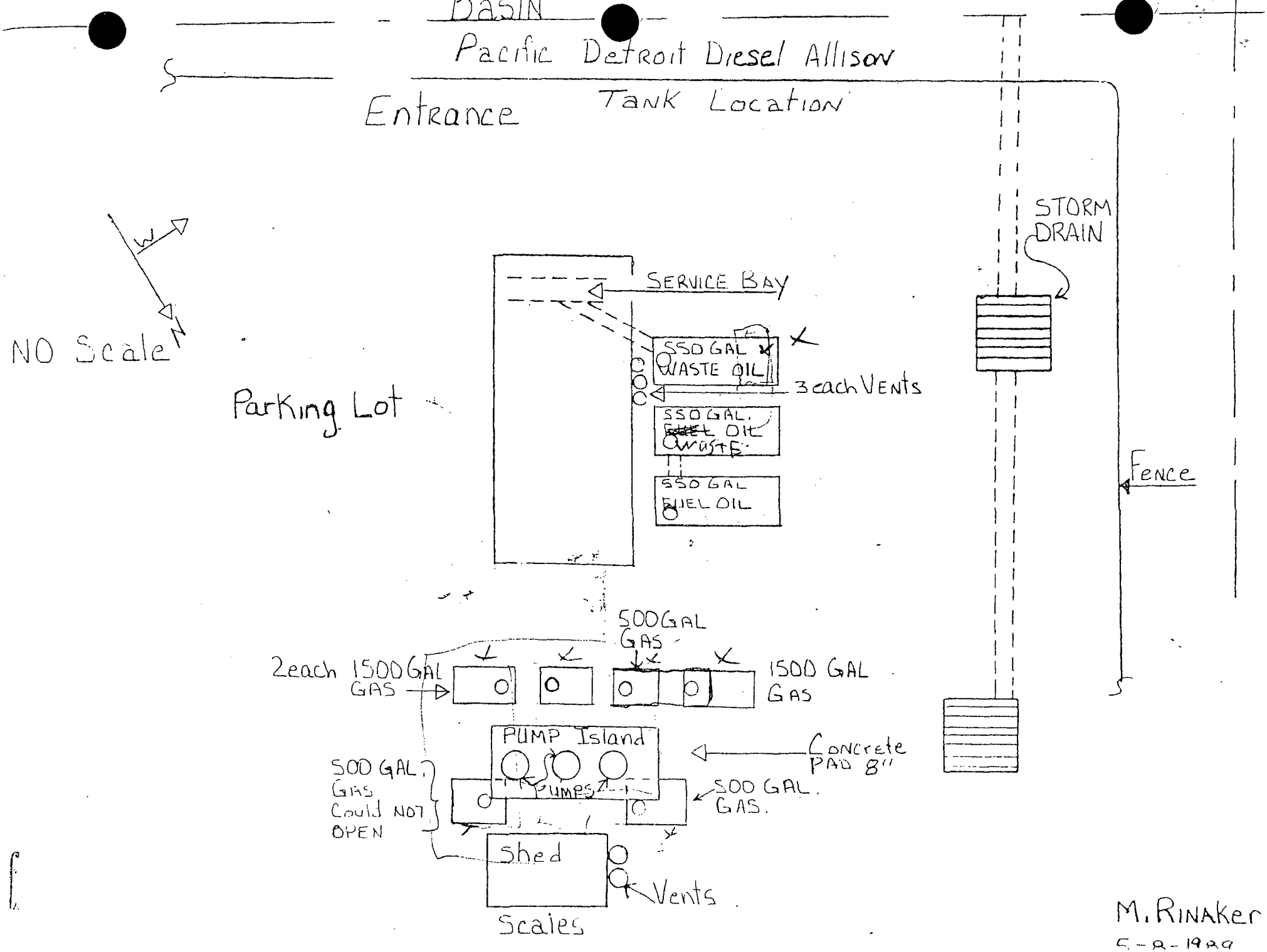
leaking. Upon confirmation of laboratory analysis the leakage from the tanks was quite extensive.

Immediately a site remedial plan of action was put into affect. First Crosby & Overton laid out polyurathane for the excavated soils above the tanks and stocked piled all soil that was excavated necessary to remove the tanks. Once the tanks were removed Crosby & Overton submitted a special waste permit applicaton to Metro Disposal to the attention of Rob Smoot, Hazardous Waste Engineer. Rob Smoot reviewed the application and analytical data on the contaminated soil and approved it for disposal at the St. John's Landfill located in Portland, Oregon. The contaminated soil was issued a permit number and approximately 1,100 yards was transported to S. Johns Landfill. Once the D.E.Q. standard of "sight and smell" was met for the excavation of the contaminated area soil samples were drawn from each wall and floor of the excavation and sent to a certified laboratory for analytical evaluation for the following: Benzene, Toluene, Ethyl Benzene, Xylene, Gasoline and Total Petroleum Hydrocarbons (see attached analysis).

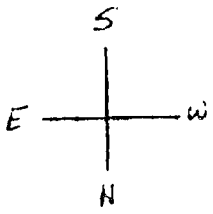
Site Closure:

On June 8, 1989, the D.E.Q.'s environmental engineer for the underground storage tank program approved backfill of the excavation. The site excavation was then refilled with environmental clean backfill and compacted to 90% of original.

The excavation which previously contained the waste oil tanks had passive ventilation installed to treat contaminated soil left under the building. The level of petroleum Hydrocarbons left in the excavations are below the action level for a Zone 2 industrial area and with time the level will degrade to a much lower level by natural biodegration.



M. RINAKER
5-8-1990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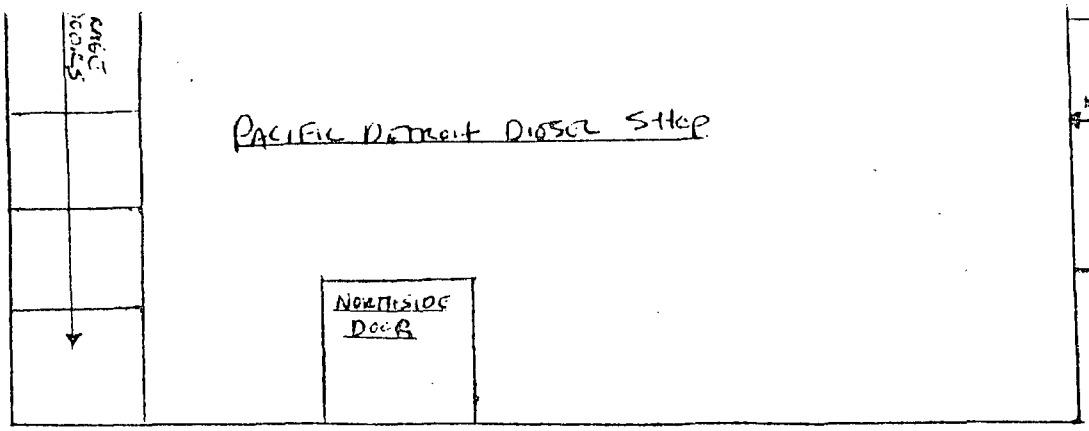
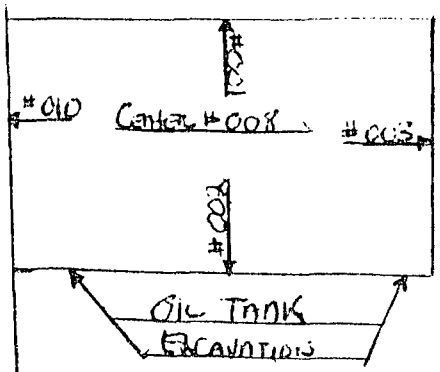
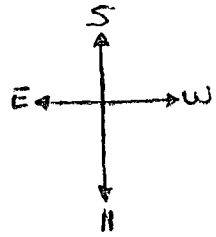

CARGO HOLDS
PACIFIC DETROIT DIESEL STOP
NORTHSIDE DOOR


#001
#010
Center #008
#003
#002
OIL TANK EXCAVATIONS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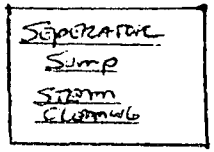
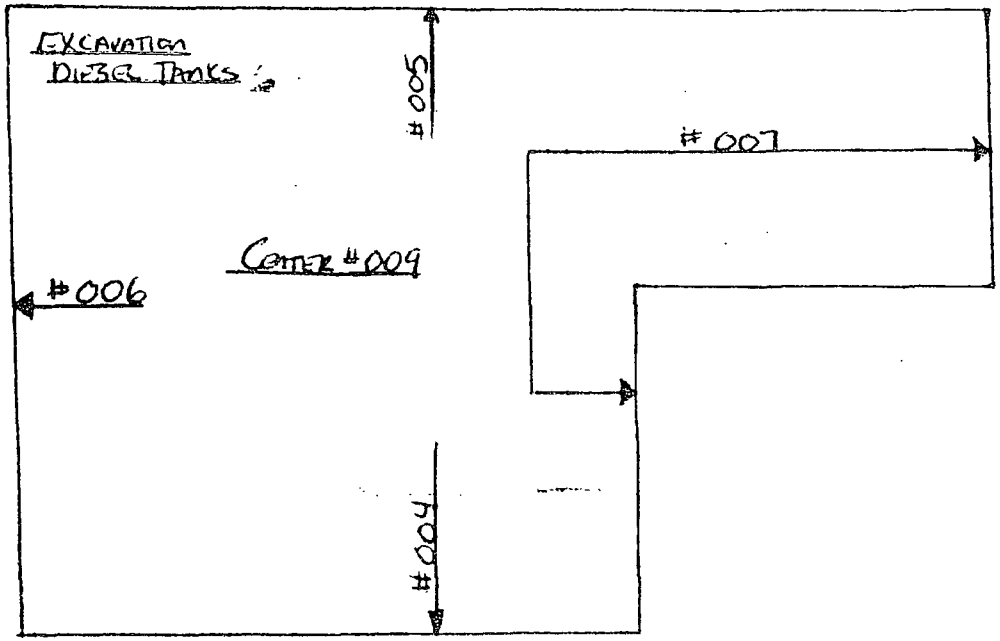

SEPARATOR SUMP
STORM CLEANOUT


EXCAVATION DIESEL TANKS
#005
#007
Center #009
#006
#004

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AVERY

Easy Index
Indexing System

May 31, 1989

Marvin Pierce
Pacific Detroit Diesel
5061 N. Lagoon Ave.
Portland, Oregon 97217

Re: Remediation Action Plan

Dear Marvin:

The following is a plan for remediation of petroleum contaminated soils at the Basin Street Shop location on Swan Island.

Contaminated soil will be removed to the extent of what is reasonably feasible i.e. to the edge of building and or roadways. Soil samples of clean walls and floors of the excavation will be taken and analyzed. Clean soil will be used as backfill and compacted to 90%. All representatives and regulatory agencies will be informed on progress of the project. Metro disposal has been chosen by the client as an initial facility for disposal of the soil. Ground water will be tested to determine if it has been affected. A final report will be submitted to D.E.Q. and Pacific Detroit Diesel.

If you have any questions about the plan or would like any modifications, please call me.

Sincerely,

Hubert Willer
Project Manager

METRO

2000 S.W. First Avenue
Portland, OR 97201-5398
503/221-1646

RECEIVED
MAY 30 1989
METRO SERVICE DISTRICT
SOLID WASTE DEPT.

Application to Dispose of Special Wastes

Approved pl

INSTRUCTIONS: Please read important information on other side. Type, or print heavily in ink. The person responsible for accuracy of information must sign. Return all copies of completed application and any supporting information to Metro along with a check for the $25 application fee.

Office use only
Permit no. [illegible]
Expires 7/30/89

Applicant's Name [illegible]

Address [illegible] City [illegible] Zip Code [illegible]

Contact Person [illegible] Phone [illegible]

Description of Special Waste (waste composition and physical, chemical, manufacturing process from which waste originated)

[illegible]

One time disposal? ___ yes ___ no Disposal frequency (if more than one time) ---

Quantity; (gallons, drums, lbs., cubic yards) [illegible] Quantity per year —

Hazardous ___ yes ___ no How did you determine whether hazardous or not? Material Safety Data Sheet ___

test results ___ other [illegible] (enclose documents)

Handling and spill cleanup directions [illegible]

Transporter [illegible]

Previous permit for this waste, if any. Number ___

NO SEALED EMPTY CONTAINERS WILL BE ACCEPTED. If empty pesticide containers only: (a) Describe material originally in containers —

(b) Describe method of cleansing, rinsing and preparation of containers —

Certificate of Accuracy of Description: This is to certify that the above describe materials are properly classified, identified, packaged, marked, labeled, cleansed, rinsed and prepared as indicated above.

X – Signature [illegible] **Date** [illegible]

(also type or print name) [illegible]

DEQ Review: The above described special waste or empty container(s) is approved ___ disapproved ___ for disposal at the St. Johns Landfill.

Signature ___ Date ___

(also type or print name) ___

Special Instructions ___

Metro Action: Disposal of the above described special waste or empty container(s) is approved X disapproved ___

for disposal at the St. Johns Landfill at a disposal rate of $ 41.25 per ton; [illegible] per trip minimum charge.

Signature [illegible] Date 5/30/89

(also type or print name) ___

GENERAL INSTRUCTIONS: Appointment required 24 HOURS prior to each disposal. Call 286-9614. Cash on disposal (NO CHECKS) or have prior account established. To establish an account, call Accounting at 221-1646.

SPECIAL INSTRUCTIONS: ___

8-86/85355

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204-1334
229-5559 and in Oregon 1-800-452-4011

NEIL GOLDSCHMIDT
GOVERNOR

PERMITTEE

Roger Burpee
Pacific Detroit Diesel Allison, Inc.
5061 North Lagoon Avenue

Portland, OR 97217

UNDERGROUND STORAGE TANK PROGRAM
TEMPORARY PERMIT

FACILITY

Facility I.D. Number: 8346

PERMIT NUMBER: GFEG
ISSUE DATE: 27-OCT-88

PACIFIC DETROIT DIESEL ALLISON, INC.
5940 NORTH BASIN
PORTLAND, OR 97217

Tank I.D. Number: 1

Tank Contents:
TANK EMPTY
DIESEL

The Department of Environmental Quality issues this temporary permit with the understanding that the Permittee is to comply with the conditions on the reverse side of this temporary permit.

Fred Hansen
Director
Department of Environmental Quality

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204-1334
229-5559 and in Oregon 1-800-452-4011

NEIL GOLDSCHMIDT
GOVERNOR

PERMITTEE

Roger Burpee
Pacific Detroit Diesel Allison, Inc.
5061 North Lagoon Avenue

Portland, OR 97217

UNDERGROUND STORAGE TANK PROGRAM
TEMPORARY PERMIT

FACILITY

Facility I.D. Number: 8346

PERMIT NUMBER: CFEH
ISSUE DATE: 27-OCT-88

PACIFIC DETROIT DIESEL ALLISON, INC.
5940 NORTH BASIN
PORTLAND, OR 97217

Tank I.D. Number: 2

Tank Contents:
TANK EMPTY
DIESEL

The Department of Environmental Quality issues this temporary permit with the understanding that the Permittee is to comply with the conditions on the reverse side of this temporary permit.

Fred Hansen
Director
Department of Environmental Quality

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204-1334
229-5559 and in Oregon 1-800-452-4011

NEIL GOLDSCHMIDT
GOVERNOR

PERMITTEE

Roger Burpee
Pacific Detroit Diesel Allison, Inc.
5061 North Lagoon Avenue

Portland, OR 97217

UNDERGROUND STORAGE TANK PROGRAM
TEMPORARY PERMIT

FACILITY

Facility I.D. Number: 8346

PERMIT NUMBER: CFEJ
ISSUE DATE: 27-OCT-88

PACIFIC DETROIT DIESEL ALLISON, INC.
5940 NORTH BASIN
PORTLAND, OR 97217

Tank I.D. Number: 3

Tank Contents:
USED OIL

The Department of Environmental Quality issues this temporary permit with the understanding that the Permittee is to comply with the conditions on the reverse side of this temporary permit.

Fred Hansen
Director
Department of Environmental Quality

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204-1334
229-5559 and in Oregon 1-800-452-4011

NEIL GOLDSCHMIDT
GOVERNOR

PERMITTEE

Roger Burpee
Pacific Detroit Diesel Allison, Inc.
5061 North Lagoon Avenue

Portland, OR 97217

OCT 31 19

UNDERGROUND STORAGE TANK PROGRAM
TEMPORARY PERMIT

FACILITY

Facility I.D. Number: 8346

PERMIT NUMBER: CFFK
ISSUE DATE: 27-OCT-88

PACIFIC DETROIT DIESEL ALLISON, INC.
5940 NORTH BASIN
PORTLAND, OR 97217

Tank I.D. Number: 4

Tank Contents:
TANK EMPTY
USED OIL

The Department of Environmental Quality issues this temporary permit with the understanding that the Permittee is to comply with the conditions on the reverse side of this temporary permit.

Fred Hansen
Director
Department of Environmental Quality

PERMANENT DECOMMISSIONING

Oregon has adopted standards for permanently decommissioning an underground storage tank. Any tank permanently decommisssioned after February 1, 1988 must follow the procedures as set forth in OAR 340-150-130. The requirement for written notification prior to decommissioning a tank may be fulfilled by completing this form and returning it to DEQ UST Program, 811 S.W. Sixth Ave., Portland, OR. 97204.

FACILITY I.D.# 8346

Name Same

Address 5061 N. Lagoon Ave
Portland Or 97217

Phone 283-0505

TANK OWNER

Name Pacific Detroit Diesel Allison Inc

Address 5940 North Basin
Portland Or 97217

Phone same

TANK ID # 1, 2, 3, 4 Two unknowns.

Date to be Permanently Decommissioned: 5/25/89

Procedure To Be Used:

- Remove X
- Fill with inert material _____ Material to be used: _____

Your name (please print) MARVIN PIERCE Date: 5-17-89

Signature _____

Marine & Environmental Testing, Inc.
P.O. BOX 1142 BEAVERTON, OR 97075-1142
503-286-2950

☐ CONTINUATION OF SERIAL NO. _____

☒ LAND/UNDERGROUND STORAGE TANK SERIAL NO. _____

C+O	Pacific Detroit Diesel	5-25-89
Survey Requested by	Vessel Owner or Agent	Date
4 Tanks	Underground Tanks	5940 N. Lu...
Vessel	Type of Vessel	Specific Location of Vesse
2 Diesel - 1 Gasoline - 1 Transmission Oil	O2/LEL	14:25
Last Three (3) Cargoes	Tests Performed	Time Survey Complete

4 USTs = Safe for Hot Work

Not Safe for Workers Entry

1. Tanks are now above ground & inerted to less than 5% Oxygen with CO_2

2. Hot work limited to cutting out Tank ends

3. Cutting Completed at 14:25 - Chemist stood by during Cutting

In the event of any physical or atmospheric changes adversely affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

QUALIFICATIONS: Transfer of ballast or manipulation of valves or closure equipment tending to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or reissue of Certificate for the spaces so affected. All lines, vents, heating coils, valves, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS (partial list, paraphrased from NFPA 306 Subsections 2-3.1 through 2-3.5, and Subsection 6-3.2)

SAFE FOR WORKERS: Means that in the compartment or space so designated: (a) the oxygen content of the atmosphere is at least 19.5 percent by volume; and that, (b) toxic materials in the atmosphere are within permissible concentrations; and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Marine Chemist's Certificate.

NOT SAFE FOR WORKERS: Means that in the compartment or space so designated, the requirements of Safe for Workers have not been met.

ENTER WITH RESTRICTIONS: Means that in any compartment or space so designated, entry for work may be made only if conditions of proper protective equipment, clothing, and time are as specified.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit; and that, (c) the residues are not capable of producing a higher concentration than permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Marine Chemist's Certificate; and further, that, (d) all adjacent spaces containing or having contained flammable or combustible materials have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or, in the case of fuel tanks or lube oil tanks, or engine room or fire room bilges, have been treated in accordance with the Marine Chemist's requirements.

NOT SAFE FOR HOT WORK: Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met.

SAFE FOR REPAIR YARD ENTRY: Means that the compartments and spaces of the flammable cryogenic liquid carrier so designated: (a) have been tested by sampling at remote sampling stations, and results indicate the atmosphere tested to be above 19.5 percent oxygen, and less than 10 percent of the lower flammable limit, or (b) are inerted.

CHEMIST'S ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards on Vessels and have found the condition of each to be in accordance with its assigned designation.

"The undersigned acknowledges receipt of this Certificate under Section 2-6 of NFPA 306 and understands conditions and limitations under which it was issued.

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed P Burke (Name) C+O (Company) 5/25/89 (Date)

Signed Jay Carlin (Marine Chemist) 644 (Certificate No)

CITY OF PORTLAND-BUREAU OF FIRE-FIRE P[illegible]TION DIVISION

FIRE MARSHAL'S PERMIT BILLING

Year		Permit No.
1989		890552

TYPE OF PERMIT | INITIAL FEE | ANNUAL FEE

Yr	Perm
1989	890

Please make checks pay
the CITY TREASUR
and mail to 55 S.W. Ash
Portland, OR

Amount $ 38.75
Check No. 14710
Date 5-22-89

DETACH THIS STUB
KEEP FOR YOUR REC

[redacted]

19D	TANK ABANDONMENT	500 GAL.
19D.	TANK ABANDONMENT	500 GAL.
19D	TANK ABANDONMENT	500 GAL.
19 D	TANK ABANDONMENT	500 GAL.
19D	TANK ABANDONMENT	1,000 GAL.
19D	TANK ABANDONMENT	1,000 GAL.

$38.75

PACIFIC DETROIT DIESEL (Crosby &
(Overton)
5940 N. Basin
Portland, OR

By: C Bunberg

Total Amount Due	
Dollars	Cents
$ 38	75

To insure proper credit and immed delivery of perm return LEFT port of billing with remittance.

PFB 30012 (6/85)

Marine & Environmental Testing, Inc.
P.O. BOX 1142 BEAVERTON, OR 97075-1142
503-286-2950

☐ CONTINUATION OF SERIAL NO. _____

☑ ~~LAND~~/UNDERGROUND STORAGE TANK SERIAL NO. CB 7689

Crosby + Overton	Pacific Diesel	7 June 1989
Survey Requested by	Vessel Owner or Agent	Date
Diesel Tank #1	Cylindrical Tank	Pacific Diesel, Basin 3
Vessel	Type of Vessel	Specific Location of Vessel
Diesel	O_2 - Visual	1428
Last Three (3) Cargoes	Tests Performed	Time Survey Completed

Diesel Tank] Safe for Hot Work to Scrape end from the tank

This tank is inert with CO_2 and contains less than 6% O_2

In the event of any physical or atmospheric changes adversely affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

QUALIFICATIONS: Transfer of ballast or manipulation of valves or closure equipment tending to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or reissue of Certificate for the spaces so affected. All lines, vents, heating coils, valves, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS (partial list, paraphrased from NFPA 306 Subsections 2-3.1 through 2-3.5, and Subsection 6-3.2)

SAFE FOR WORKERS: Means that in the compartment or space so designated: (a) the oxygen content of the atmosphere is at least 19.5 percent by volume; and that, (b) toxic materials in the atmosphere are within permissible concentrations; and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Marine Chemist's Certificate.

NOT SAFE FOR WORKERS: Means that in the compartment or space so designated, the requirements of Safe for Workers have not been met.

ENTER WITH RESTRICTIONS: Means that in any compartment or space so designated, entry for work may be made only if conditions of proper protective equipment, clothing, and time are as specified.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit; and that, (c) the residues are not capable of producing a higher concentration than permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Marine Chemist's Certificate; and further, that, (d) all adjacent spaces containing or having contained flammable or combustible materials have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or, in the case of fuel tanks or lube oil tanks, or engine room or fire room bilges, have been treated in accordance with the Marine Chemist's requirements.

NOT SAFE FOR HOT WORK: Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met.

SAFE FOR REPAIR YARD ENTRY: Means that the compartments and spaces of the flammable cryogenic liquid carrier so designated: (a) have been tested by sampling at remote sampling stations, and results indicate the atmosphere tested to be above 19.5 percent oxygen, and less than 10 percent of the lower flammable limit, or (b) are inerted.

CHEMIST'S ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards on Vessels and have found the condition of each to be in accordance with its assigned designation.

"The undersigned acknowledges receipt of this Certificate under Section 2-6 of NFPA 306 and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and issued subject to compliance with all qualifications and instructions.

Signed _____ Name _____ Company

6-7-89 Signed Carlton Bruce 609
Date Marine Chemist Certificate No

City of Portland
FIRE PREVENTION DIVISION
55 S.W. Ash Street
Portland, OR 97204 Phone: 248-0203

PERMIT NUMBER 890639

FEE AMOUNT 38.75

CODE 19b1

Subject to the compliance with the ordinances of the City of Portland, permission is hereby granted for the installation of:

X NEW INSTALLATION _____ADDITION _____ALTERATION _____REPAIR _____REMOVE

X LIQUIDS/TANKS _____L.P.G. _____COMPRESSED GASES _____DRY CLEANING PLANTS _____PAINT SPRAY BOOTHS

Located at 5940 N. Basin Ave. - Pacific Detroit Diesel

Contractor Crosby & Overton Inc.

Permit Issued 6-12- 1989

Fire Marshal

By M. Greenslade

INSPECTION RECORD:	DATE	INSPECTOR	OTHER
APPROVE TANK/CYLINDER LOCATION			
APPROVE PIPING AND VALVES			
PRESSURE TEST WITNESSED			
OK TO COVER			

FINAL APPROVAL

_____
DATE INSPECTOR

NOTE: Keep card conspicuously posted on premises until job is completed and final inspection made.
Request for final must be made within 14 days after completion of work. Permit valid for 180 days only

Date 6-12 19 89 Cash _____ Check 14753

No T 052

Received of Crosby & Overton, Inc.

The sum of Thirty Eight & 75/100 $ 38.75

300.151 Rev. 4-

By M. Hamilton

PACIFIC ANALYTICAL LABORATORY inc.
9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660

May 26, 1989

Crosby & Overton
5420 N. Lagoon
Portland, OR 97217

Attn: Hubert Willer

PAL REPORT NUMBER: 89-0469
P.O./JOB NUMBER: 23847/8416K Pacific Detroit Diesel
DATE SUBMITTED: 5/24/89
ITEMS: Three Soil Samples

ANALYSIS

METHOD: Modified EPA 3810 (GC/MS)
Results in mg/kg (ppm)

Compound	UST1	UST2	UST3	Lab Blank	Detec. Limit
Methylene Chloride	ND	ND	--	ND	0.1
Trichlorofluoromethane	ND	ND	--	ND	0.2
1,1-Dichloroethene	ND	ND	--	ND	0.1
1,1-Dichloroethane	ND	ND	--	ND	0.1
trans-1,2-Dichloroethene	ND	ND	--	ND	0.1
Chloroform	ND	ND	--	ND	0.1
1,2-Dichloroethane	ND	ND	--	ND	0.1
1,1,1-Trichloroethane	ND	ND	--	ND	0.1
Carbon Tetrachloride	ND	ND	--	ND	0.1
Bromodichloromethane	ND	ND	--	ND	0.1
1,2-Dichloropropane	ND	ND	--	ND	0.2
trans-1,3-Dichloropropane	ND	ND	--	ND	0.2
Trichloroethene	ND	ND	--	ND	0.1
Benzene	ND	ND	ND	ND	0.1
Dibromochloromethane	ND	ND	--	ND	0.1
1,1,2-Trichloroethane	ND	ND	--	ND	0.1
cis-1,3-Dichloropropene	ND	ND	--	ND	0.2
2-Chloroethylvinyl ether	ND	ND	--	ND	0.2
Bromoform	ND	ND	--	ND	0.1
1,1,2,2-Tetrachloroethane	ND	ND	--	ND	0.2
Tetrachloroethene	ND	ND	--	ND	0.1
Toluene	ND	ND	ND	ND	0.1
Chlorobenzene	ND	ND	--	ND	0.1
Ethyl Benzene	ND	ND	ND	ND	0.1
1,3-Dichlorobenzene	ND	ND	--	ND	0.1
1,2-Dichlorobenzene	ND	ND	--	ND	0.1
1,4-Dichlorobenzene	ND	ND	--	ND	0.1
Xylene	ND	ND	ND	ND	0.1
Gasoline	ND	ND	ND	ND	1

ND = Not Detected

METHOD: EPA 413.1
Results in mg/kg (ppm)

	UST1	UST2	UST3	Lab Blank	Detection Limit
TPH	27500	46100	24	ND	5

METHOD: EPA 8080
Results in ug/g (ppm)

	UST1	UST2
PCB	<0.2	<0.3

METHOD: EPA 1310, 7000 series
Results in mg/L (ppm)

	UST1	UST2	Lab Blank	Detection Limit
Cadmium	ND	ND	ND	0.02
Chromium	ND	ND	ND	0.1
Lead	ND	ND	ND	0.1

METHOD: EPA 1010

	UST1	UST2	UST3
Flashpoint	None to 200°F	None to 200°F	None to 200°F

ND = Not Detected

Respectfully,

John Melvin
Chemist

Kim Chiusolo
Chemist

PACIFIC ANALYTICAL LABORATORY inc.
9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660

June 8, 1989

Crosby & Overton
5420 N. Lagoon
Portland, OR 97217

Attn: Hubert Willer
Gary Renforth

PAL REPORT NUMBER: 89-0512
P.O./JOB NUMBER: 23847/8439K
DATE SUBMITTED: 6/02/89
ITEMS: Three Soil Samples

ANALYSIS

METHODS: TPH per EPA 418.1
BTEX, Gas per Modified EPA 3810 (GC/MS)
TOX (as halogenated solvents) per Modified EPA 3810
Results in mg/kg (ppm)

	#4	#5	#6	Lab Blank	Detection Limit
Benzene	ND	ND	--	ND	0.1
Toluene	0.2	ND	--	ND	0.1
Ethyl Benzene	ND	ND	--	ND	0.1
Xylene	ND	ND	--	ND	0.1
Gas	ND	ND	--	ND	1
TOX	--	--	ND	ND	1
TPH	270	46	--	ND	5

ND = Not Detected

Respectfully,

Philip Nerenberg
Chemist

Reviewed by:

PACIFIC ANALYTICAL LABORATORY inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660

June 13, 1989

Crosby & Overton
5420 N. Lagoon
Portland, OR 97214

Attn: Gary Renforth

PAL REPORT NUMBER: 89-0527
P.O. NUMBER: 23847
JOB NUMBER: 8439K (Pacific Detroit Diesel)
DATE SUBMITTED: 6/06/89
ITEMS: Nine Soil Samples

ANALYSIS

METHODS: BTEX, Gas per Modified EPA 3810 (GC/MS)
TPH per EPA 418.1
Results in mg/kg (ppm)

	#1	#2	#3	#4	#6	#7
Benzene	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND
Xylene	ND	ND	ND	ND	ND	ND
Gasoline	ND	ND	ND	ND	ND	ND
TPH	28	33	150	29	19	180

	#8	#9	#10	Lab Blank	Detection Limit
Benzene	ND	ND	ND	ND	0.1
Toluene	ND	ND	ND	ND	0.1
Ethyl Benzene	ND	ND	ND	ND	0.1
Xylene	ND	ND	ND	ND	0.1
Gasoline	ND	ND	ND	ND	1
TPH	77	480	2100	ND	5

ND = Not Detected

Respectfully,

Philip Nerenberg
Chemist

Howard Holmes
Chemist

Crosby & Overton

SCHNITZER STEEL PRODUCTS CO.
INTERNATIONAL TERMINAL
12005 N. BURGARD, PORTLAND, OR 97203

BILL OF SALE NO.
FE-501044

VENDOR NUMBER	COMMODITY NUMBER	COMMODITY DESCRIPTION	CONTRACT NUMBER
	103		

I REPRESENT AND WARRANT THAT THIS MATERIAL DOES NOT CONTAIN A HAZARDOUS SUBSTANCE AS DEFINED BY FEDERAL OR STATE LAW, AND I AGREE TO INDEMNIFY SCHNITZER STEEL PROD. CO. AGAINST ALL CLAIMS.

G N 42540 G 16 01:00 PM 05/30/89 ◀ G

T A 29140 G 16 01:22 PM 05/30/89 ◀ T

N 12,400 ◀ N

DRY

WET/SNOW

WEIGHER

BILL OF SALE

I hereby state that I am the lawful owner of the material described hereon, that I have a right to sell same and that for payment received in full, hereby acknowledged, I sell and convey title of same to SCHNITZER STEEL PRODUCTS CO.

X [signature]

CUSTOMER

PRICE	EXTENDED	TIME
68-	455.60	
CARRIER	TRACTOR NO.	

S1009

Asby & Overton

SCHNITZER STEEL PRODUCTS CO.
INTERNATIONAL TERMINAL
12005 N. BURGARD, PORTLAND, OR 97203

BILL OF SALE NO.
FE-503595

CONTRACT NUMBER

I REPRESENT AND WARRANT THAT THIS MATERIAL DOES NOT CONTAIN A HAZARDOUS SUBSTANCE AS DEFINED BY FEDERAL OR STATE LAW, AND I AGREE TO INDEMNIFY SCHNITZER STEEL PROD. CO. AGAINST ALL CLAIMS.

IDOR MBER

COMMODITY NUMBER 193

COMMODITY DESCRIPTION

N 7260 G lb 10:23 AM 06/12/89 ◀ G

A 6260 G lb 10:41 AM 06/12/89 ◀ T

1000 ◀ N

DRY

WET/SNOW

WEIGHER

BILL OF SALE

ereby state that I am the lawful owner of the material described eon, that I have a right to sell same and that for payment re- ved in full, hereby acknowledged, I sell and convey title of same SCHNITZER STEEL PRODUCTS CO.

PRICE 65-

EXTENDED 32.50

CARRIER

TRACTOR NO.

TIME

5001

RECEIVING RECORD

8439K 7471

RECEIVED FROM: Crosby & OVERTON

ADDRESS:

PURCHASE ORDER NO. OR RETURNED GOODS | FREIGHT BILL NO. | DATE: 6-5-89

VIA: C & O / Pacific Detroit Diesel | PREPAID | COLLECT

	QUANTITY	ITEM NUMBER	DESCRIPTION
1	1,000 gals		Dirty Diesel
2			
3			
4			2.0% H_2O
5			
6			(Put into Tank "B")
7			
8			
9			
10			
11			
12			

REMARKS, CONDITIONS, ETC.

NO. PACKAGES	WEIGHT	RECEIVED BY	CHECKED BY	DELIVERED TO

REDIFORM 2L260/01260

BE SURE TO MAKE THIS RECORD ACCURATE AND COMPLETE

CARBONLESS

RECEIVING RECORD

8439K 7473

RECEIVED FROM: Crosby & Overton

ADDRESS:

PURCHASE ORDER NO. OR RETURNED GOODS | FREIGHT BILL NO. | DATE: 6/5/89

VIA: Dixie Detroit Diesel | PREPAID | COLLECT

	QUANTITY	ITEM NUMBER	DESCRIPTION
1	600		gals Wash Water
2			
3			100 % Hot
4			
5			(Put in Hot #1)
6			
7			
8			
9			
10			
11			
12			

REMARKS: CONDITIONS, ETC.

NO. PACKAGES	WEIGHT	RECEIVED BY	CHECKED BY	DELIVERED TO

REDIFORM™ 2L260/01260

BE SURE TO MAKE THIS RECORD ACCURATE AND COMPLETE

CARBONLESS

Job # 8416 K 6882

Pacific [illegible] Post

RECEIVED FROM Crosby & Overton

ADDRESS

PURCHASE ORDER NO. OR RETURNED GOODS	FREIGHT BILL NO.	DATE 3/23/89
VIA		PREPAID / COLLECT

	QUANTITY	ITEM NUMBER	DESCRIPTION
1	2500		gals Water + Oil
2			
3			% H2O
4			
5			(Potw Ho #1)
6			
7			
8			
9			[signature]
10			
11			
12			

REMARKS: CONDITIONS, ETC.

NO. PACKAGES	WEIGHT	RECEIVED BY	CHECKED BY	DELIVERED TO

REDIFORM™ 2L260/01260

BE SURE TO MAKE THIS RECORD ACCURATE AND COMPLETE

CARBONLESS

NEIL GOLDSCHMIDT
GOVERNOR

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

August 30, 1989

Mr. Marvin Pierce
Pacific Detroit Diesel Allison
5061 N. Lagoon Ave.
Portland, Oregon 97217-7994

Re: UST-Multnomah County
Pacific Detroit Diesel

Dear Mr. Pierce:

We have completed our review of Crosby and Overton's report, dated June 15, 1989, concerning the underground storage tank decommissionings and contaminated soil cleanup conducted at your facility located at 5940 N. Basin Ave. in Portland, Oregon. Since this information indicates that the decommissioning and cleanup met our criteria, no further action is required at this time.

This decision is a result of our evaluation and judgement based on the regulations at the time of cleanup and the facts as we now understand them, including:

1. The six underground storage tanks (3-1,000 gallon, 1-10,000 gallon, 1-8,000 gallon, and 1-3,000 gallon) were removed from the site and taken to Schnitzer Steel Products for recycling.

2. Contaminated soil was discovered in the tank excavations. The diesel and used oil contaminated soil was removed from the excavations until the criteria of no visible contamination or odor was met except for some waste oil contaminated soil left under the building. Approximately 1,100 cubic yards of soil was removed from the site and taken to St. Johns Landfill for disposal.

3. Confirmation soil sample analyses detected 28 to 150 parts per million (ppm) total petroleum hydrocarbons (TPH) remaining in the "clean" portions of the waste oil tank excavation and 19 to 480 ppm TPH remaining in the "clean" portions of the diesel tank excavation. These levels are consistent with the no visible contamination or odor for diesel and waste oil. The contaminated soils left under the building were found to contain 2100 ppm TPH. A passive venting system was installed next to the building in order to supply oxygen to the remaining contaminated soil in order to accelerate natural degradation.

4. No ground water was reported in the excavation. Since waste oil and diesel have low volatile constituent concentrations and because no ground water was observed in the excavation, suggests that the potential for the remaining contamination to migrate is minimal.

Information concerning the tank and contaminated soil removal should be maintained with the permanent facility records. We remind you that the current investigation applies only to the leaking underground storage tank systems and in no way transfers any liability to the State of Oregon. Although we agree that the current conditions at the site do not appear to pose an environmental threat, the responsibility for environmental evaluation, reporting, and cleanup rests with the landowners.

If you have any question regarding this matter, please contact me at 229-6923.

Sincerely,

Andree Pollock

Andree Pollock
Leaking UST Specialist
Northwest Region

cc: Environmental Cleanup Division, LUST Section
Crosby and Overton, Inc.
5420 N. Lagoon Ave.
Portland, Oregon 97217
Attn: Gary Renforth

Geotechnical Resources Incorporated

Consulting Engineers & Geologists

July 1, 1991 J\RELEASE.892

Underground Storage Tank Section
Department of Envirnmental Quality
811 SW Sixth Ave.
Portland, OR 97204

Attention: Andree Pollock

SUBJECT: DIESEL RELEASE, PACIFIC DETROIT DIESEL, 5940 N. BASIN AVENUE, PORTLAND, OREGON

As reported to you by telephone on June 28, 1991, a release of diesel was noted during excavation and decommissioning of a 1,000-gal. underground storage tank (UST) at the above-referenced property and groundwater was encountered at the base of this excavation.

This letter is intended to inform DEQ that remediation of potentially contaminated soils in the vicinity of the former tank location will be begin on July 2, 1991, with excavation of affected areas and on-site soil aeration. While a Corrective Action Plan has not yet been developed for the site, this work will be conducted in accordance with OAR 340-122-250 (4), which allows for immediate cleanup action in the interest of minimizing environmental impacts. All remediation work will be documented as part of the forthcoming Corrective Action Plan.

In addition, a summary of our initial abatement measures will be submitted to you within 20 days of our initial discussion, and the initial site characterization report will shortly follow.

If you have any questions regarding this project, please feel free to contact me.

Respectfully submitted for,
GEOTECHNICAL RESOURCES, INC.

David D. Driscoll, P.E.
Principal

cc: Marvin Pierce / Detroit Diesel

7412 SW Beaverton-Hillsdale Hwy
Suite 102
Portland, Oregon 97225
Phone (503) 292-2621
FAX (503) 297-1696

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

July 3, 1991

MARVIN PIERCE
PACIFIC DETROIT DIESEL ALLISON
5061 NORTH LAGOON
PORTLAND OREGON 97217

RE: UST - Multnomah County
Pacific Detroit Diesel
Allison - Basin #2
File No. 26-91-241

Dear Mr. Pierce:

A release was reported from your underground storage tank (UST) system at your facility located at 5940 North Basin in Portland, Oregon. As the responsible party for this facility, you are required to document the remediation process. The following is an outline of the reporting process required by the Northwest Region, Department of Environmental Quality:

1. If the cleanup is to be completed within 45 days of identifying the release, a single, final report can be submitted within 30 days of cleanup completion. This will satisfy the documentation requirements, provided you meet the provisions of OAR 340-122-360.

2. If cleanup cannot be completed within 45 days, submittal of an initial status report is required within 45 days of reporting the release. The report must summarize the findings to-date, outline your planned actions, and include anticipated dates of completion for each action. Additional interim reports may also be required depending on individual circumstances. A final report will be required within 30 days of completion of the project.

Please keep the Department up-to-date on activities at the site. This will help to expedite cleanup and closure of the site. File No. 26-91-241 has been assigned to this project. Please reference this number in all future correspondence.

811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696

Removing contaminated soils to the matrix cleanup levels is only one of many options that you may wish to consider for your site. You may find the services of a qualified consultant helpful in evaluating different cleanup options. Cleanup options other than removal to matrix standards require that a Corrective Action Plan (CAP) be submitted to the Department for approval. If a CAP is appropriate for your site, additional information about this process may be obtained from the region.

The Department is required to recover costs from the responsible party for oversight of CAP cleanups. You will be notified if the Department determines that cost recovery will be implemented for your sites. For general information about the cost recovery process, please contact Mr. Rick Silverman at (503) 229-6384.

Thank you for your cooperation and continued efforts to comply with the regulations. If you have any questions, please contact the Northwest Region at (503) 229-6385.

Sincerely,

NORTHWEST REGION
UST Cleanup Section

cc: UST Cleanup Section, ECD

Geotechnical Resources Incorporated

Consulting Engineers & Geologists

September 16, 1991 J/PROPOSAL.948

Pacific Detroit Diesel-Allison
5061 N. Lagoon Avenue
Portland, OR 97217-7694

Attention: Marvin Pierce

SUBJECT: ENVIRONMENTAL SERVICES; MITIGATION OF CONTAMINATION ASSOCIATED WITH STEAM CLEANING OPERATION, DETROIT DIESEL TRANSMISSION SHOP, 5940 N. BASIN AVENUE, PORTLAND, OREGON

This is to confirm your verbal authorization for Geotechnical Resources, Inc. (GRI) to proceed with the mitigation of contamination associated with the steam cleaning operation at the Detroit Diesel facilities at 5940 N. Basin Avenue, Portland, Oregon.

The steam cleaning system is located in the western corner of the transmission shop and is used to clean used transmissions and parts prior to their repair. It is our understanding that the waste from the system was piped to a 4 by 4 by 5 ft steel sump buried outside the building and that, during the decommissioning of the sump, you discovered that the soil in the vicinity of the sump had been contaminated by chronic leakage in the piping to and/or from the sump.

Our services will include the following tasks:

1) GRI will supervise the enlargement of the excavation in the vicinity of the sump. As this work proceeds, a geologist from GRI will observe the subsurface conditions encountered in the bottom and sidewalls of the excavation and will direct the excavator's activity so as to remove the obviously contaminated soil. The contaminated soil will be stockpiled temporarily at the site. In this regard, we understand that you will retain Benting Construction, Inc. (BCI) to provide the excavation and earth-moving services required. This task was completed on September 12, 1991.

2) Our representative will collect soil samples from the bottom and sidewalls of the excavation. The samples will be analyzed by a subcontracting laboratory. The data will be used to characterize the contaminants involved and to determine if the excavation phase is complete. If the analytical results indicate that additional excavation is warranted, GRI will supervise that work.

7412 SW Beaverton-Hillsdale Hwy
Suite 102
Portland, Oregon 97225
Phone (503) 292-2621
FAX (503) 297-1696

3) We will evaluate the feasibility of on-site remediation of the contaminated soil.

4) We will prepare a report containing a description the work performed, the conditions observed, the analytical results obtained and recommendations for any further work which may be necessary. This report will be in a form suitable for submission to the Department of Environmental Quality.

The fee for our services will be computed on a time-and-materials basis in accordance with the attached General Conditions of the Proposal and Fee Schedule. For planning purposes, we suggest that you assign a budget of $5,000 for our services. We will advise you immediately if it appears that this amount will be exceeded.

Formal authorization for our services can be provided by signing and returning the attached General Conditions of the Proposal. We appreciate the opportunity to work with you on this project.

Sincerely,

GEOTECHNICAL RESOURCES, INC.

David D Driscoll

David D. Driscoll, P.E.
Principal

Enclosed: General Conditions of the Proposal (2)
Fee Schedule

GENERAL CONDITIONS OF THE PROPOSAL

TECHNICAL RESOURCES, INC.
7412 S.W. Beaverton-Hillsdale Hwy.
Portland, Oregon 97225

Attachment to Proposal Dated: September 16, 1991
To: Pacific Detroit Diesel-Allison, Portland, Oregon
For: Environmental Services; Mitigation of Contamination Associated with Steam Cleaning Operation, Detroit Diesel Transmission Shop, 5940 N. Basin Avenue, Portland, Oregon

PROFESSIONAL SERVICES

Fees for services by Geotechnical Resources, Inc.'s professional, technical, and clerical personnel will be charged according to time expended on the project at rates shown on the attached schedule.

SERVICES, SUPPLIES PROVIDED BY OTHERS, AND REIMBURSABLE EXPENSES

Charges for services, equipment and supplies not provided directly by Geotechnical Resources, Inc. will be computed at cost plus 10 percent. This includes surveying services, land subsurface explorations, construction equipment, testing laboratories, contract labor, shipping charges, living expenses, printing and reproduction, communication and miscellaneous supplies and rentals.

EQUIPMENT CHARGES

Charges for equipment furnished by Geotechnical Resources, Inc. will be computed in accordance with the unit rates shown on the attached Fee Schedule.

RIGHT-OF-ENTRY

Unless otherwise agreed, you will furnish right-of-entry on the land for us to make planned borings, surveys, and other explorations. We will take reasonable precautions to minimize damage to the land from use of equipment, but have not included in our fee the cost for restoration of damage which may result from our operation. If you desire us to restore the to its former condition, we will accomplish this and add the cost to our fee.

UTILITIES

In the performance of our work, we will take all reasonable precautions to avoid damage or injury to subsurface structures or utilities. The Client/Owner agrees to hold us harmless for any damages to subsurface structures or utilities which are not called to our attention and correctly shown on the plans furnished.

SAMPLES

All samples of soil and rock will be discarded thirty (30) days after submission of our report, unless you advise us otherwise. Further storage or transfer of samples can be made at your expense upon written request.

INVOICING OF PAYMENT

Invoices will be submitted once a month for services performed during the prior month. Payment will be due within thirty (30) days of receipt of invoice. Interest will be added to overdue accounts at the rate of 1.5% for each month of delinquency.

INSURANCE

Our firm represents and warrants that it and its agents, staff, and consultants employed by it, is and are protected by worker's compensation insurance and that we have such coverage under public liability and property damage insurance policies which we deem to be adequate. Certificates for all such policies of insurance shall be provided to the Client/Owner upon request in writing. Within the limits and conditions of such insurance, we agree to indemnify and save Client/ Owner harmless from and against any loss, damage, or liability arising from any negligent acts by us, our agents, staff, and any consultants employed by us. We shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance. We shall not be responsible for any loss, damage, or liability arising from any acts by Client/Owner, its agents, staff and other consultants employed by it.

(over)

GENERAL CONDITIONS OF THE PROPOSAL

GEOTECHNICAL RESOURCES, INC.
7412 S.W. Beaverton-Hillsdale Hwy.
Portland, Oregon 97225

Attachment to Proposal Dated: September 16, 1991
To: Pacific Detroit Diesel-Allison, Portland, Oregon
For: Environmental Services; Mitigation of Contamination Associated with Steam Cleaning Operation, Detroit Diesel Transmission Shop, 5940 N. Basin Avenue, Portland, Oregon

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In the performance of our work, we will take all reasonable precautions to avoid damage or injury to subsurface structures or utilities. The Client/Owner agrees to hold us harmless for any damages to subsurface structures or utilities which are not called to our attention and correctly shown on the plans furnished.

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Invoices will be submitted once a month for services performed during the prior month. Payment will be due within thirty (30) days of receipt of invoice. Interest will be added to overdue accounts at the rate of 1.5% for each month of delinquency.

INSURANCE

Our firm represents and warrants that it and its agents, staff, and consultants employed by it, is and are protected by worker's compensation insurance and that we have such coverage under public liability and property damage insurance policies which we deem to be adequate. Certificates for all such policies of insurance shall be provided to the Client/Owner upon request in writing. Within the limits and conditions of such insurance, we agree to indemnify and save Client/ Owner harmless from and against any loss, damage, or liability arising from any negligent acts by us, our agents, staff, and any consultants employed by us. We shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance. We shall not be responsible for any loss, damage, or liability arising from any acts by Client/Owner, its agents, and other consultants employed by it.

(over)

GEOTECHNICAL RESOURCES, INC.

FEE SCHEDULE, JULY 1991

PERSONNEL	RATE/HOUR
Principal	$95
Project Engineer/Geologist	$70
Environmental Scientist	$60
Staff Engineer/Geologist	$55
Drafter	$39
Word Processor	$39

OTHER CHARGES

Vehicle: Vehicles will be charged at $0.25 per mile or $4.00 per hour (maximum of 8 hours per day), whichever is greater.

Fill Control Equipment: Nuclear Density Gage rental will be billed at $5.00 per hour, with maximum charge of $25 per day or $125 per week.

Reproduction: In-house reproduction, $0.10 per sheet.

Field Instrumentation and Monitoring Equipment: Due to varied conditions, equipment requirements, location and use, rates for vibration monitoring equipment, inclinometer, and other specialized equipment will be provided as required.

Subcontractor Services: Charges for subcontractor services will be computed at cost plus 10%.

Travel and Subsistence: All charges related to travel and subsistence will be computed at cost plus 10%.

Geotechnical Resources Incorporated

Consulting Engineers & Geologists

October 29, 1991 J/SOILDISP.892

Metropolitan Service District
2000 SW First Avenue
Portland, OR 97201

Attention: Jim Quinn

SUBJECT: REMEDIATED SOIL, PACIFIC DETROIT DIESEL-ALLISON FACILITY, 5940 N. BASIN AVENUE, PORTLAND, OREGON

During the week of June 24, 1991, approximately 300 cubic yards of soil were excavated from the vicinity of an underground storage tank at the above-referenced facility. The tank, which contained diesel fuel for an on-site heating and air conditioning system, had leaked, contaminating the soil with diesel oil; no gasoline or waste oil was involved.

The excavated soil, a relatively clean, medium-grained dredged sand, was spread in a thin (12 to 18 in.) layer on an unused portion of the site for remediation. At intervals of 10 to 14 days, depending somewhat on the local weather conditions, the soil was mixed and aerated with a tractor-mounted roto-tiller. On July 10, and August 14, 1991, GRI collected representative samples from randomly selected portions of the soil layer. These samples were analyzed by a certified laboratory for total petroleum hydrocarbons by DEQ Method TPH(D) and EPA Method 418.1M. The results of these analyses indicate that the concentrations of diesel fuel ranged from less than 25 mg/kg up to 35 mg/kg and that the combined concentrations of diesel and heavy oils ranged from 30 to 120 mg/kg. A copy of the chain-of-custody forms and laboratory reports are attached for your information.

In its present state, the soil meets the cleanup standards promulgated by DEQ for Level II sites. It is our understanding that the soil may be used as fill on any site which meets the DEQ matrix requirements for level II or III, provided that it is not placed in direct contact with groundwater and provided that DEQ is informed of the location and conditions of placement.

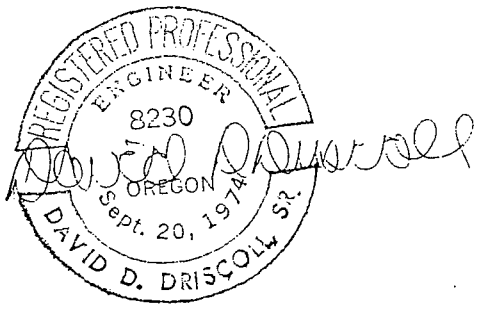
If you accept the material, please provide Geotechnical Resources, Inc. and DEQ with a completed matrix calculation sheet for the placement site, a site plan showing the final location of the material, and the

7412 SW Beaverton-Hillsdale Hwy
Suite 102
Portland, Oregon 97225
Phone (503) 292-2621
FAX (503) 297-1696

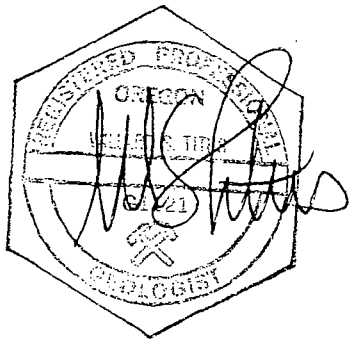
highest seasonal groundwater levels at that location. If you have any questions or comments regarding this matter or if we can be of further assistance, please do not hesitate to call at any time.

Sincerely,

GEOTECHNICAL RESOURCES, INC.



David D. Driscoll, P.E.
Principal



Willard S. Titus, P.G.
Project Geologist

Enclosed: Chain of Custody (2)
Laboratory Reports (2)

cc: Marvin Pierce, Pacific Detroit Diesel-Allison
Frank Nichols, Oregon Pacific Tank Services, Inc.

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

RECEIVED
JUL 25 1991
GEOTECHNICAL RESOURCES, INC.

July 19, 1991

Geotechnical Resources, Inc.
7412 S.W. Beaverton-Hillsdale Hwy.
Portland, OR 97225

Attn: William Titus

Re: JOB #892
P.O. #892
PROJECT - Detroit Diesel (Basin)
PEL #91-2121

Enclosed is the lab report for your samples which were received on July 10, 1991.

I. Sample Description

Four Soil Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Howard Boorse
QA/QC Manager

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2121
CLIENT: Geotechnical Resources, Inc.
JOB REFERENCE: 892
P.O. NUMBER: 892
PROJECT: Detroit Diesel (Basin)
DATE: July 19, 1991
ITEMS: Four Soil Samples

METHOD: TPH-D per Oregon DEQ
Results in mg/kg (ppm)

Sample I.D.	Diesel/ Related	Comments
892-7-10-1	35	
892-7-10-2	ND	
892-7-10-3	ND	j. (C_{20}-C_{36})
892-7-10-4	ND	j. (C_{20}-C_{36})
Lab Blank	ND	
Detection Limit	25	

j. Contains a heavy petroleum product with the carbon range listed. However, the product cannot be quantitated by this method.

TPH-D Surrogate Recoveries (%)

Sample I.D.	1-chlorooctadecane
892-7-10-1	106
892-7-10-2	103
892-7-10-3	101
892-7-10-4	105

PACIFIC ENVIRONMENTAL LABORATORY INC.

9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644- 0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

COMPANY GEOTECHNICAL RESOURCES, INC. PROJECT NAME DETROIT DIESEL (BASIN) LAB PROJECT NUMBER 91-2121

PROJECT MANAGER W.S. TITUS PROJECT NUMBER 892

COLLECTED BY W.S. TITUS P.O. NUMBER 892 RUSH ☐ YES ☒ NO

COMMENTS

SAMPLES RECEIVED AT 4°C ☐ YES ☐ NO 24.6°C

SAMPLES IN APPROPRIATE CONTAINERS ☒ YES ☐ NO

PROVIDE VERBAL RESULTS ☐ YES ☒ NO

PROVIDE PRELIMINARY FAX RESULTS ☒ YES ☐ NO

PROVIDE FINAL FAX RESULTS ☒ YES ☐ NO

PEL NO.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	ANALYSES TO BE PERFORMED: TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEQ	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	REMARKS
	892-7-10-1	7/10	AM	BASIN	X			1			X											
	892-7-10-2	7/10	AM	BASIN	X			1			X											
	892-7-10-3	7/10	AM	BASIN	X			1			X											
	892-7-10-4	7/10	AM	BASIN	X			1			X											

ALL SAMPLES WILL BE DISPOSED OF 30 DAYS AFTER RECEIPT

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
[signature]	GEOTECHNICAL RESOURCES, INC	7/10/91 @ 18:50	Kate [signature]	PEL
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

Report Date: August 26, 1991
Job#: TP-910814Z-3
Project: Pacific Detroit Diesel

Attention: Bill Titus
Geotechnical Resources, Inc.
7412 SW Beaverton-Hillsdale Hwy
Suite 102
Portland, OR 97225

SAMPLE INFORMATION:
Date Samples Were Received By Laboratory: 08/14/91

Lab No.	Field Identification	Sample Matrix	Date
1	PDD-1	Soil	08/14/91
2	PDD-2	Soil	08/14/91
3	PDD-3	Soil	08/14/91

ANALYTICAL RESULTS:

Analysis Performed: TPH-418.1 Modified, by the Oregon DEQ Method, IR Spectrophotometry.

PARAMETER	DETECTION LIMIT	SAMPLE #1 RESULTS	SAMPLE #2 RESULTS	SAMPLE #3 RESULTS
Total Petroleum Hydrocarbons	5	120	47	30

Results expressed as mg/kg unless otherwise noted.

Sincerely,

Renee Chauvin,
Technical Director

RJC/mlh

This report is for the sole and exclusive use of the above-named client. Samples are retained 15 days from the report date, or until holding time expires. Results pertain only to samples submitted.

COFFEY LABORATORIES INC.
12423 N.E. WHITAKER WAY, PORTLAND, OR 97230
(503) 254-1794 • FAX (503) 254-1452

CHAIN OF CUSTODY

COFFEY LABORATORIES - PENDLETON BRANCH
287 S.E. FIRST, PENDLETON, OR 97801
(503) 276-0385

PROJECT #:	PROJECT NAME:	P.O. #:	PAGE 1 of 1 PAGES PLEASE PRINT OR TYPE	FOR LABORATORY USE ONLY
	Pacific Detroit Diesel	←		

COMPANY NAME: GRI
REPORT ATTENTION: Bill Titus FAX:
SAMPLES COLLECTED BY: SLM

JOB #: TP9158.14-3
CUSTABBR: Geotech Res

FIELD IDENTIFICATION: ONE LINE PER SAMPLE CONTAINER	LAB LOC	LAB ID	COLLECTION DATE	COLLECTION TIME	MEDIA	ANALYSIS REQUESTED	ANALYSIS REMARKS
PDD-1		1n	8/14/91	PM	Soil	DEQ TPH 418.1	FAX
PDD-2		2n	↓	↓	↓	X	
PDD-3		3n					

RELINQUISHED BY: Shawn J Malone DATE/TIME 8-14-91
RECEIVED BY: DATE/TIME LAB USE
RELINQUISHED BY: DATE/TIME
RECEIVED BY LAB: DATE/TIME

SAMPLE REMARKS:

LEVEL 1 2 3 4 EXPRESS UPS MAIL GXX GREY TAXI LAB

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PINK COPY - CLIENTS COPY

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CHAIN OF CUSTODY INSTRUCTIONS ON BACK OF PINK COPY

(7/90)

Geotechnical Resources Incorporated

Consulting Engineers & Geologists

NOV 25 1991

November 19, 1991

J\MATRIX.892

Department of Environmental Quality
Northwest Region
811 SW Sixth Avenue
Portland, OR 97204

Attention: Andree Pollock

SUBJECT: MATRIX EVALUATION OF OFF-SITE LOCATION FOR PLACEMENT OF REMEDIATED SOIL FROM THE PACIFIC DETROIT DIESEL ALLISON SITE, 5940 N. BASIN AVENUE, PORTLAND, OREGON

As we have previously reported to the Department of Environmental Quality (DEQ), during the week of June 24, 1991, Geotechnical Resources Inc. (GRI) observed excavation of approximately 300 cubic yards of diesel-contaminated soils as part of an underground storage tank decommissioning at the above-referenced site.

The soil was subsequently spread in a thin (12 to 18 in.) layer on the site and periodically mixed with a tractor-mounted roto-tiller to enhance aeration and volitalization. Analysis of random soil samples collected from the pile on July 10, and August 14, 1991, demonstrated that the material meets DEQ soil matrix cleanup standards for a level II site (see attached data sheets). It is our understanding that the soil may now be placed on any site which meets the level II or level III requirements, as long as groundwater at that site will not be in contact with the soil and DEQ is provided with a complete description of the location and conditions of soil placement.

Pacific Detroit Diesel intends to transfer the soil to Mr. Kenneth Mann for use as fill at his residence, 335 Parsons Road, in Washington County, Oregon. The location of this property is shown on the Vicinity Map, Figure 1. The following matrix calculation was performed for the site:

1. **Depth to Groundwater.** Information on the depth to groundwater in the vicinity of the site was limited; a depth of 51 to 100 ft was conservatively assumed.

   Score: 4 points

2. **Mean Annual Precipitation.** The reported mean precipitation at the Forest Grove station, 9 miles southeast of the site, was 44.85 in.

   Score: 10 points

3. **Native Soil Type.** The U.S. Soil Conservation Service Soil Survey for Washington County indicates the site is underlain by silty loam.

   Score: 5 points

7412 SW Beaverton-Hillsdale Hwy
Suite 102
Portland, Oregon 97225
Phone (503) 292-2621

4. **Sensitivity of the Uppermost Aquifer.** The aquifer was rated as a sole source; however, residents reported that many people bring in bottled water because the groundwater is salty.

   Score: 10 points

5. **Potential Receptors.** There is no municipal water supply system in this region. The nearest well is thought to be < ½ mile away. A total of 53 well logs were on file with the Water Resources Department for the area within 1 mile of the site, resulting in a "medium" rating.

   Score: 10 points

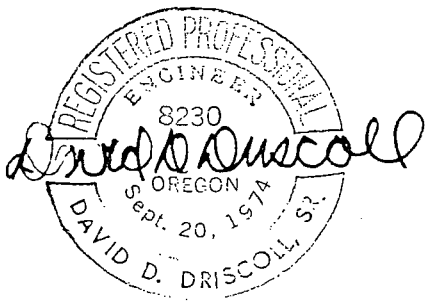
   Matrix Score: 39 points

Since the score is below 40, the property can be considered a level II site, suitable for placement of the remediated soils. While not addressed in the matrix evaluation, it was noted that Little Beaver Creek crosses the property approximately 200 yards downslope from the depressed area to be filled. It is anticipated that surface runoff from the filled area would flow toward the creek. According to the site owner, no downstream uses of Little Beaver Creek, a tributary to Gales Creek, are known. However, to encourage infiltration of runoff, straw bales will be placed along the downslope boundary of the fill.

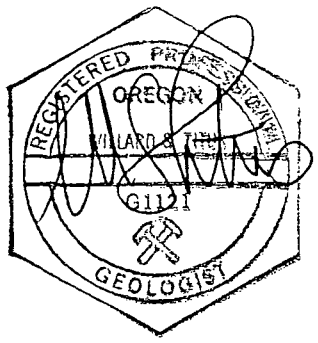
Since we would like to complete the soil placement as soon as possible, your prompt response to this proposal would be greatly appreciated.

Respectfully submitted for

GEOTECHNICAL RESOURCES, INC.

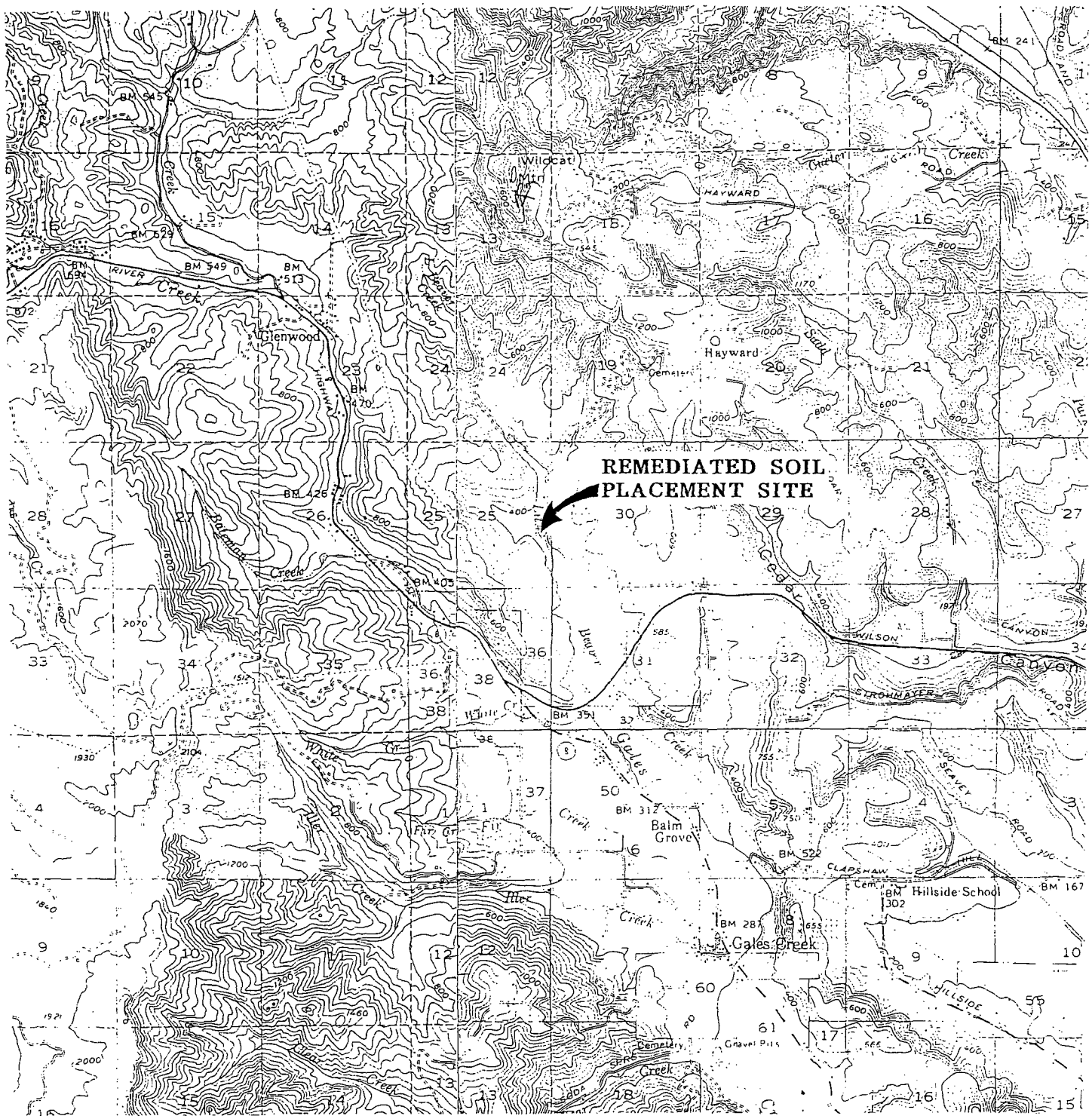


David D. Driscoll, P.E.
Principal



Willard S. Titus, P.G.
Project Geologist

Enclosed: Laboratory analysis data



USGS TOPOGRAPHIC MAP
FOREST GROVE & TIMBER, OREG. QUADS

DEPARTMENT OF ENVIRONMENTAL QUALITY
PACIFIC DETROIT DIESEL - ALLISON

GRI

VICINITY MAP

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

RECEIVED
JUL 18
GEOTECHNICAL RESOURCES, INC.

July 10, 1991

Geotechnical Resources, Inc.
7412 S.W. Beaverton-Hillsdale Hwy.
Portland, OR 97225

Attn: William Titus

Re: JOB #892
P.O. #892
PROJECT - Detroit Diesel
PEL #91-2055

Enclosed is the lab report for your samples which were received on July 2, 1991.

I. Sample Description

Seven Soil Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Howard Boorse
QA/QC Manager

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2055
CLIENT: Geotechnical Resources, Inc.
JOB REFERENCE: 892
P.O. NUMBER: 892
PROJECT: Detroit Diesel
DATE: July 10, 1991
ITEMS: Seven Soil Samples

METHOD: TPH-HCID per Oregon DEQ
Detection limits in mg/kg (ppm)

Sample I.D.	Gasoline	Diesel	Bunker/ Related
892-7-2-4	ND	Detected	Detected
Lab Blank	ND	ND	ND
Detection Limit	20	50	--

TPH-HCID Surrogate Recovery (%)

Sample I.D.	1-chlorooctadecane
892-7-2-4	110

METHOD: TPH-D per Oregon DEQ
Results in mg/kg (ppm)

Sample I.D.	Hydro-carbon	Carbon Range	Comments
892-7-2-1	---	C_{22}-C_{35}	j.
892-7-2-2	220	C_{10}-C_{28}	
	---	C_{28}-C_{37}	j.
892-7-2-3	ND	---	
892-7-2-4	170	C_{10}-C_{28}	
	---	C_{28}-C_{36}	j.
892-7-2-5	100	C_{14}-C_{28}	
	---	C_{28}-C_{36}	j.
892-7-2-6	ND	---	
892-7-2-7	45	C_{20}-C_{28}	
	---	C_{28}-C_{36}	j.
Lab Blank	ND	---	
Detection Limit	25	C_{10}-C_{28}	
Detection Limit	75	C_{28}-C_{40}	

j. Contains a heavy petroleum product with the carbon range listed. However, the product cannot be quantitated by this method.

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2055
CLIENT: Geotechnical Resources, Inc.
JOB REFERENCE: 892
P.O. NUMBER: 892
PROJECT: Detroit Diesel
DATE: July 10, 1991
ITEMS: Seven Soil Samples

TPH-D Surrogate Recoveries (%)

Sample I.D.	1-chlorooctadecane
892-7-2-1	86
892-7-2-2	94
892-7-2-3	92
892-7-2-4	77
892-7-2-5	91
892-7-2-6	91
892-7-2-7	76

METHOD: BTEX per EPA Method 8020
Soil results in ug/kg (ppb)

Sample I.D.	Benzene	Toluene	Ethyl Benzene	Total Xylene	Detection Limit
892-7-2-4	ND	ND	ND	ND	5.0
892-7-2-6	ND	ND	ND	ND	2.0
Lab Blank	ND	ND	ND	ND	1.0

8020 Surrogate Recoveries (%)

Sample I.D.	4-Bromofluorobenzene (65-125%)
892-7-2-4	82
892-7-2-6	93
Lab Blank	98

PACIFIC ENVIRONMENTAL LABORATORY INC.

9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644- 0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

2- 3 DAY RUSH

COMPANY GEOTECHNICAL RESOURCES
PROJECT NAME DETROIT DIESEL
LAB PROJECT NUMBER 91-2055

PROJECT MANAGER W.S. TITUS
PROJECT NUMBER 892

COLLECTED BY W.S. TITUS
P.O. NUMBER 892

RUSH ☒ YES ☐ NO ~~24 HOUR~~ WSF

COMMENTS
1

SAMPLES RECEIVED AT 4°C ☐ YES ☐ NO
SAMPLES IN APPROPRIATE CONTAINERS ☐ YES ☐ NO

PROVIDE VERBAL RESULTS ☐ YES ☐ NO
PROVIDE PRELIMINARY FAX RESULTS ☐ YES ☐ NO
PROVIDE FINAL FAX RESULTS ☐ YES ☐ NO

SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEC	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 502/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	REMARKS
892-7-2-1	7/2	AM		X						X											
892-7-2-2	7/2	AM		X						X											
892-7-2-3	7/2	AM		X						X											
892-7-2-4	7/2	PM		X				X		X				X							
892-7-2-5	7/2	PM		X						X											
892-7-2-6	7/2	PM		X						X				X							
892-7-2-7	7/2	PM		X						X											

FAX RESULTS TO TITUS AT 297-1606

BILL

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
W.S. Titus	GEOTECHNICAL RESOURCES	7/2/91	Julie Reynolds	1550 PEL 7-2-91
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

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JUL 25 1991
GEOTECHNICAL RESOURCES, INC.

July 19, 1991

Geotechnical Resources, Inc.
7412 S.W. Beaverton-Hillsdale Hwy.
Portland, OR 97225

Attn: William Titus

Re: JOB #892
P.O. #892
PROJECT - Detroit Diesel (Basin)
PEL #91-2121

Enclosed is the lab report for your samples which were received on July 10, 1991.

I. Sample Description

Four Soil Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Howard Boorse
QA/QC Manager

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2121
CLIENT: Geotechnical Resources, Inc.
JOB REFERENCE: 892
P.O. NUMBER: 892
PROJECT: Detroit Diesel (Basin)
DATE: July 19, 1991
ITEMS: Four Soil Samples

METHOD: TPH-D per Oregon DEQ
Results in mg/kg (ppm)

Sample I.D.	Diesel/ Related	Comments
892-7-10-1	35	
892-7-10-2	ND	
892-7-10-3	ND	j. (C_{20}-C_{36})
892-7-10-4	ND	j. (C_{20}-C_{36})
Lab Blank	ND	
Detection Limit	25	

j. Contains a heavy petroleum product with the carbon range listed. However, the product cannot be quantitated by this method.

TPH-D Surrogate Recoveries (%)

Sample I.D.	1-chlorooctadecane
892-7-10-1	106
892-7-10-2	103
892-7-10-3	101
892-7-10-4	105

ENVIRONMENTAL LABORATORY INC.

[redacted] S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644-0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

COMPANY GEOTECHNICAL RESOURCES, INC PROJECT NAME DETROIT DIESEL (BASIN) LAB PROJECT NUMBER 91-2121

PROJECT MANAGER W.S. TITUS PROJECT NUMBER 892

COLLECTED BY W.S. TITUS P.O. NUMBER 892 RUSH ☐ YES ☒ NO

COMMENTS

SAMPLES RECEIVED AT 4°C ☐ YES ☐ NO 24.6°C

SAMPLES IN APPROPRIATE CONTAINERS ☒ YES ☐ NO

PROVIDE VERBAL RESULTS ☐ YES ☒ NO

PROVIDE PRELIMINARY FAX RESULTS ☒ YES ☐ NO

PROVIDE FINAL FAX RESULTS ☒ YES ☐ NO

EL O.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	ANALYSES TO BE PERFORMED: TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEQ	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 508/8080	TCLP (8) Metals						REMARKS
	892-7-10-1	7/10	AM	BASIN	X			1			X																
	892-7-10-2	7/10	AM	BASIN	X			1			X																
	892-7-10-3	7/10	AM	BASIN	X			1			X																
	892-7-10-4	7/10	AM	BASIN	X			1			X																

ALL SAMPLES WILL BE DISPOSED OF 30 DAYS AFTER RECEIPT

QUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
	GEOTECHNICAL RESOURCES, INC	7/10/91 @ 18:50	Kate	PEL
QUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
QUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

rec'd 4 907.

Report Date: August 26, 1991
Job#: TP-910814Z-3
Project: Pacific Detroit Diesel

Attention: Bill Titus
Geotechnical Resources, Inc.
7412 SW Beaverton-Hillsdale Hwy
Suite 102
Portland, OR 97225

SAMPLE INFORMATION:
Date Samples Were Received By Laboratory: 08/14/91

Lab No.	Field Identification	Sample Matrix	Date
1	PDD-1	Soil	08/14/91
2	PDD-2	Soil	08/14/91
3	PDD-3	Soil	08/14/91

ANALYTICAL RESULTS:

Analysis Performed: TPH-418.1 Modified, by the Oregon DEQ Method, IR Spectrophotometry.

PARAMETER	DETECTION LIMIT	SAMPLE #1 RESULTS	SAMPLE #2 RESULTS	SAMPLE #3 RESULTS
Total Petroleum Hydrocarbons	5	120	47	30

Results expressed as mg/kg unless otherwise noted.

Sincerely,

Renee Chauvin,
Technical Director

RJC/mlh

This report is for the sole and exclusive use of the above-named client. Samples are retained 15 days from the report date, or until holding time expires. Results pertain only to samples submitted.

)FFEY LABO ORIES INC.
'423 N.E. WHITAKER WAY, PORTLAND, OR 97230
)3) 254-1794 • FAX (503) 254-1452

COFFEY LABORATORIES - PENDLETON BRANCH
287 S.E. FIRST, PENDLETON, OR 97801
(503) 276-0385

IAIN OF CUSTODY

OJECT #:	PROJECT NAME: Pacific Detroit Diesel	P.O. #: ←	PAGE 1 of 1 PAGES PLEASE PRINT OR TYPE	FOR LABORATORY USE ONLY

MPANY NAME: GRI
PORT ATTENTION: Bill Titus FAX:
JOB #: TP91581 4—3
MPLES COLLECTED BY: SLM
CUSTABBR: Geotech Res

LD IDENTIFICATION: LINE PER SAMPLE CONTAINER	LAB LOC	LAB ID	COLLECTION DATE	COLLECTION TIME	MEDIA	ANALYSIS REQUESTED	ANALYSIS REMARKS
PDD-1		1	8/14/91	PM	Soil	DEQ TPH 418.1	FAX
PDD-2		2	↓	↓	↓	↓	
PDD-3		3	↓	↓	↓	↓	

INQUISHED BY: [signature]	DATE/TIME 8-14-91	RECEIVED BY:	DATE/TIME	LAB USE
INQUISHED BY:	DATE/TIME	RECEIVED BY LAB: [signature]	DATE/TIME	
IPLE REMARKS:		LEVEL 1 2 3 4	EXPRESS UPS MAIL CXX GREY TAXI LAB	

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CHAIN OF CUSTODY INSTRUCTIONS ON BACK OF PINK COPY

Geotechnical Resources Incorporated

Consulting Engineers & Geologists

December 24, 1991 J/FINALRPT.892

Pacific Detroit Diesel-Allison
5061 N. Lagoon Avenue
Portland, Oregon 97217-7694

Attention: Marvin Pierce

SUBJECT: UNDERGROUND STORAGE TANK DECOMMISSIONING AND SOIL REMEDIATION, PACIFIC DETROIT DIESEL FACILITIES, 5940 N. BASIN AVENUE, PORTLAND, OREGON

At your request, Geotechnical Resources, Inc. (GRI) provided environmental consulting services for the decommissioning of three underground storage tanks (USTs) and the associated site characterization, cleanup investigation and remediation of contaminated soil for the Pacific Detroit Diesel facilities at 5940 N. Basin Avenue in Portland, Oregon. The general location of the site is shown on the Vicinity Map, Figure 1.

Our scope of work included observing the decommissioning process; collecting and analyzing soil and groundwater samples collected from the tank excavations; investigating the nature, extent, and degree of soil and groundwater contamination associated with the USTs; developing recommendations for specific corrective action to mitigate the contamination; and directing those mitigation activities. Oregon Pacific Tank Services, Inc. (OPTS) decommissioned the tanks, provided excavation and earthmoving services for the project, and disposed of the decommissioned tanks. Limited excavation services were also provided by Benting Construction, Inc. (Benting). Spencer Environmental, Inc. (Spencer) purged and cleaned the tanks and pumped and disposed of groundwater from one of the excavations. Coffey Laboratories, Inc. (Coffey); Pacific Environmental Laboratory, Inc. (PEL); Oregon Analytical Laboratory, Inc. (OAL); and Haymond & Associates (Haymond) provided analytical services. This report documents the work accomplished and summarizes our conclusions and recommendations.

BACKGROUND

The site occupies approximately 5 acres in a rectangular parcel on the northeast side of N. Basin Avenue in Portland's Swan Island industrial district. The parcel is occupied by two separate structures used for office space and the remanufacturing and repair of large diesel engines and transmissions. The configuration of the site and the locations of the on-site improvements are shown on the Site Plan, Figure 2.

7412 SW Beaverton-Hillsdale Hwy
Suite 102
Portland, Oregon 97225
Phone (503) 292-2621
FAX (503) 297-1696

Three USTs existed at the site at the time our work on this project began. Two of the tanks, referred to here as "office building tank" and "shop tank," were used for the storage of diesel fuel for heating the two buildings. The third tank, referred to here as the "transmission tank," was used as a holding tank and separator for waste oil and solvents from a degreasing and parts cleaning operation associated with the transmission repair facility. The general locations of these tanks relative to the structures on the site are shown on Figure 2. Due to the nature of the tanks and their use, no formal decommissioning permits from the Department of Environmental Quality (DEQ) were required.

To determine the cleanup standards which might be applicable to the property, GRI evaluated the site with respect to each of the five specific parameters outlined in the DEQ regulations related to the remediation of sites contaminated by leaking underground storage tanks (OAR 340-122-305 to 360). The individual parameters and the numeric scores assigned to each are as follows:

Parameter	Score
1) Depth to groundwater (9 ft)	10
2) Mean Annual Precipitation (37.4 in.)	5
3) Native Soil Type (sand, trace to some silt)	10
4) Sensitivity of Uppermost Aquifer (unusable)	1
5) Potential Receptors (many, far)	5
Total:	31

The score of 31 specifies that the site is to be considered a "Level II" site with respect to the soil cleanup matrix promulgated by DEQ, i.e., 80 mg/kg for gasoline and 500 mg/kg for diesel fuel.

OFFICE BUILDING TANK

Decommissioning

On June 26 and 27, 1991, the "office building tank," located southeast of the southeastern corner of the office building, was decommissioned. This tank was used to store diesel fuel for the furnace which heated the office building. The tank was located, uncovered, cleaned, rendered inert, and removed from the ground by OPTC, under the supervision of a licensed UST decommissioning supervisor provided by OPTC. The tank was found to be bitumen-coated steel, with a capacity of 1,000 gallons. The tank and appurtenances were disposed of off-site by OPTS. The tank appeared to be sound and watertight, but the fill and product lines were corroded and the point of connection between the fill line and the tank appeared to be leaking. The staining, odors, and sheen commonly associated with petroleum products were apparent in the soils in the vicinity of the tank.

On June 28, 1991, GRI notified DEQ that a petroleum release had been discovered and indicated that initial abatement measures, site characterization and a cleanup investigation were underway, and, in the interest of minimizing environmental contamination and promoting more effective cleanup, remediation of the release would proceed without delay under the provisions of OAR 340-122-250 (4).

ANALYTICAL RESULTS OF SOIL SAMPLES FROM EXCAVATION
(Office Building Tank)

Sample I.D.	Date	TPH-HCID, mg/kg			TPH-D, mg/kg	EPA 602/8020, mg/kg			
		Gas	Diesel	Oil		Benzene	Toluene	Ethyl-benzene	Xylenes
892-7-2-1	7/2/91	--	--	--	<25	--	--	--	--
892-7-2-2	7/2/91	--	--	--	220	--	--	--	--
892-7-2-3	7/2/91	--	--	--	<25	--	--	--	--
892-7-2-4	7/2/91	<20	D	D	170	<5	<5	<5	<5
892-7-2-5	7/2/91	--	--	--	100	--	--	--	--
892-7-2-6	7/2/91	--	--	--	<25	<2	<2	<2	<2
892-7-2-7	7/2/91	--	--	--	45	--	--	--	--
892-7-3-8	7/3/91	--	--	--	<25	--	--	--	--
892-7-3-9	7/3/91	--	--	--	45	<2	<2	<2	<2

-- indicates not analyzed
D indicates detected, but not quantified

Based on the observations made as the excavation was expanded and on the results of the analysis of representative soil samples collected from the sidewalls and bottom of the excavation, we concluded that all of the soil which had been contaminated in excess of the Level II soil matrix cleanup standard (diesel, 500 mg/kg) by releases from the leaking tank had been excavated. The "clean" soil and clean, imported sand were used to backfill the excavation. The backfilling was completed on July 15, 1991, and the area was re-paved.

Groundwater Characterization

On July 2, 1991, when the excavation had reached a depth of approximately 12 ft, groundwater began to accumulate in the bottom of the excavation. This water was seeping slowly into the excavation from the northwestern sidewall between depths of 9 and 12 ft. On July 3, 1991, the level of the groundwater in the excavation had stabilized at approximately 9 ft below the ground surface. Spencer was retained to pump the accumulated groundwater so that a representative sample of the groundwater seeping into the excavation could be obtained. Approximately 600 gallons of water were pumped from the excavation and disposed of off-site by Spencer on July 3, 1991. On the same day, a representative sample of the groundwater returning to the excavation was collected from a sump previously dug along the northwestern sidewall of the excavation. The sample was collected in a clean, wide-mouth glass jar provided by the laboratory and was transferred, with as little agitation as possible, to glass sample containers provided by the laboratory. The containers were packed in ice and submitted to the laboratory for total petroleum hydrocarbon (EPA 418.1) and volatile aromatic hydrocarbon (EPA 8020) analyses. None of the analytes were present in concentrations above the detection limits of the analyses (0.5 mg/L for TPH and 1.0 μg/L for BTEX compounds). A copy of the laboratory reports and chain-of-custody documents is included in Attachment A.

Since the groundwater sample from the excavation did not reveal the presence of total petroleum or volatile aromatic hydrocarbons, we concluded that the groundwater in the vicinity of the tanks had not been contaminated by releases from the leaking underground storage tank and groundwater remediation was not necessary.

Soil Remediation

The "contaminated" soil, which consisted of approximately 300 cubic yards of well-sorted, fine- to medium-grained sand with a trace to some silt, was initially stockpiled in the vicinity of the excavation. When the limits of the excavation had been established, the "contaminated" soil was moved to an aeration area along the southeastern margin of the property and spread out in a layer approximately 18 in. thick for remediation by passive aeration. The location of the aeration area is shown on the Site Plan, Figure 2. During the transfer of the soil from the vicinity of the excavation to the aeration area, the soil was broken up, mixed, and aerated as much as possible, and windrowed. The aeration windrows were surrounded by a retaining wall of straw bales. The soil windrows were turned and re-aerated at intervals of approximately 10 days with a small, tractor-mounted rototiller. Three representative soil samples collected from randomly chosen aeration windrows on August 14, 1991, were analyzed for total petroleum hydrocarbons (EPA 418.1M) to evaluate the progress of the remediation. The results of the analyses are summarized below. A copy of the laboratory reports and chain-of-custody documents is included in Attachment A.

ANALYTICAL RESULTS OF SOIL SAMPLES FROM AERATION WINDROWS

Sample I.D.	Date	TPH (EPA 418.1M), mg/kg
PDD-1	8/14/91	120
PDD-2	8/14/91	47
PDD-3	8/14/91	30

Based on the results of these analyses, we concluded that the passive aeration of the soil had been successful, as the total petroleum hydrocarbon levels had been lowered to levels below the Level II soil matrix cleanup standard for the site (diesel, 500 mg/kg). The remediated soil was then consolidated into a single stockpile in preparation for transfer to another site. A request for approval of that transfer was submitted to DEQ on October 29, 1991. Final action on that request has been deferred, pending DEQ's review of this report.

SHOP TANK

Decommissioning

On June 26, 1991, the "shop tank," located outside of the northwestern wall of the transmission shop building, was decommissioned. This tank held diesel fuel for the furnace which heated the shop building. The tank was located, uncovered, cleaned, rendered inert, and removed from the ground by OPTC, under the supervision of a licensed UST decommissioning supervisor. The tank was found to be bitumen-coated

steel, with a capacity of approximately 500 gallons. The tank and appurtenances were disposed of off-site by OPTS. The tank appeared to be sound and no obvious discontinuities in the fill or product lines were noted. Although no visible staining or sheen was observed in the soil in the vicinity of the tank, a faint odor was present in the soils in the vicinity of the fill line.

After the tank had been removed from the decommissioning excavation, which measured approximately 10 by 20 ft by 5 to 6 ft deep, a representative of GRI licensed by DEQ to supervise soil matrix cleanup projects examined the sidewalls and bottom of the excavation. No stained soil or petroleum sheen was observed, and the odors noted above appeared to be limited to the upper portion of the southwestern end of the excavation, in the vicinity of the fill line. Two representative soil samples were collected from the excavation, approximately 1 ft beneath the bottom of each end of the tank. The locations of these samples relative to the tank are shown on Figure 4. The samples were collected by scraping approximately 3 in. of soil from the bottom of the excavation and removing a sample from the exposed area with a clean stainless steel spoon. The samples were packed, with as little disturbance as possible, into clean wide-mouth glass jars provided by the laboratory. The jars were immediately sealed with Teflon-lined screw caps. The containers were filled completely and packed in ice immediately for transport to the laboratory. The samples were analyzed for total petroleum hydrocarbons (DEQ TPH-HCID and DEQ TPH-D).

The results of the laboratory analyses of the soil samples collected from the excavation are summarized below. A copy of the laboratory reports and chain-of-custody documents are provided in Attachment A.

ANALYTICAL RESULTS OF SOIL SAMPLES FROM EXCAVATION
(Shop Tank)

		TPH-HCID			
Sample I.D.	Date	Gas	Diesel	Oil	TPH-D, mg/kg
DTT-1	6/26/91	ND	ND	ND	<25
DTT-2	6/26/91	--	--	--	250

ND indicated not detected
-- indicates not analyzed

Based on the observations made of the soil exposed in the sidewalls and bottom of the tank excavation and on the results of the analysis of representative soil samples collected beneath the ends of the tank, we concluded that the tank had not released significant quantities of petroleum products to the soil. Although petroleum products were detected in one of the samples, it is our opinion that small, isolated overfills rather than leakage from the tank or piping was responsible. In any event, the concentrations present are below the soil matrix Level II cleanup standard for the site (diesel, 500 mg/kg). The soil which had been removed from the excavation during the decommissioning of the tank and clean, imported sand were used to backfill the excavation. The backfilling was completed on June 26, 1991.

Groundwater Characterization

Groundwater was not encountered within the "shop tank" excavation.

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

RECEIVED
JUL 18
GEOTECHNICAL RESOURCES, INC.

July 10, 1991

Geotechnical Resources, Inc.
7412 S.W. Beaverton-Hillsdale Hwy.
Portland, OR 97225

Attn: William Titus

Re: JOB #892
P.O. #892
PROJECT - Detroit Diesel
PEL #91-2055

Enclosed is the lab report for your samples which were received on July 2, 1991.

I. Sample Description

Seven Soil Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Howard Boorse
QA/QC Manager

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2055
CLIENT: Geotechnical Resources, Inc.
JOB REFERENCE: 892
P.O. NUMBER: 892
PROJECT: Detroit Diesel
DATE: July 10, 1991
ITEMS: Seven Soil Samples

METHOD: TPH-HCID per Oregon DEQ
Detection limits in mg/kg (ppm)

Sample I.D.	Gasoline	Diesel	Bunker/ Related
892-7-2-4	ND	Detected	Detected
Lab Blank	ND	ND	ND
Detection Limit	20	50	--

TPH-HCID Surrogate Recovery (%)

Sample I.D.	1-chlorooctadecane
892-7-2-4	110

METHOD: TPH-D per Oregon DEQ
Results in mg/kg (ppm)

Sample I.D.	Hydro-carbon	Carbon Range	Comments
892-7-2-1	---	C_{22}-C_{35}	j.
892-7-2-2	220	C_{10}-C_{28}	
	---	C_{28}-C_{37}	j.
892-7-2-3	ND	---	
892-7-2-4	170	C_{10}-C_{28}	
	---	C_{28}-C_{36}	j.
892-7-2-5	100	C_{14}-C_{28}	
	---	C_{28}-C_{36}	j.
892-7-2-6	ND	---	
892-7-2-7	45	C_{20}-C_{28}	
	---	C_{28}-C_{36}	j.
Lab Blank	ND	---	
Detection Limit	25	C_{10}-C_{28}	
Detection Limit	75	C_{28}-C_{40}	

j. Contains a heavy petroleum product with the carbon range listed. However, the product cannot be quantitated by this method.

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2055
CLIENT: Geotechnical Resources, Inc.
JOB REFERENCE: 892
P.O. NUMBER: 892
PROJECT: Detroit Diesel
DATE: July 10, 1991
ITEMS: Seven Soil Samples

TPH-D Surrogate Recoveries (%)

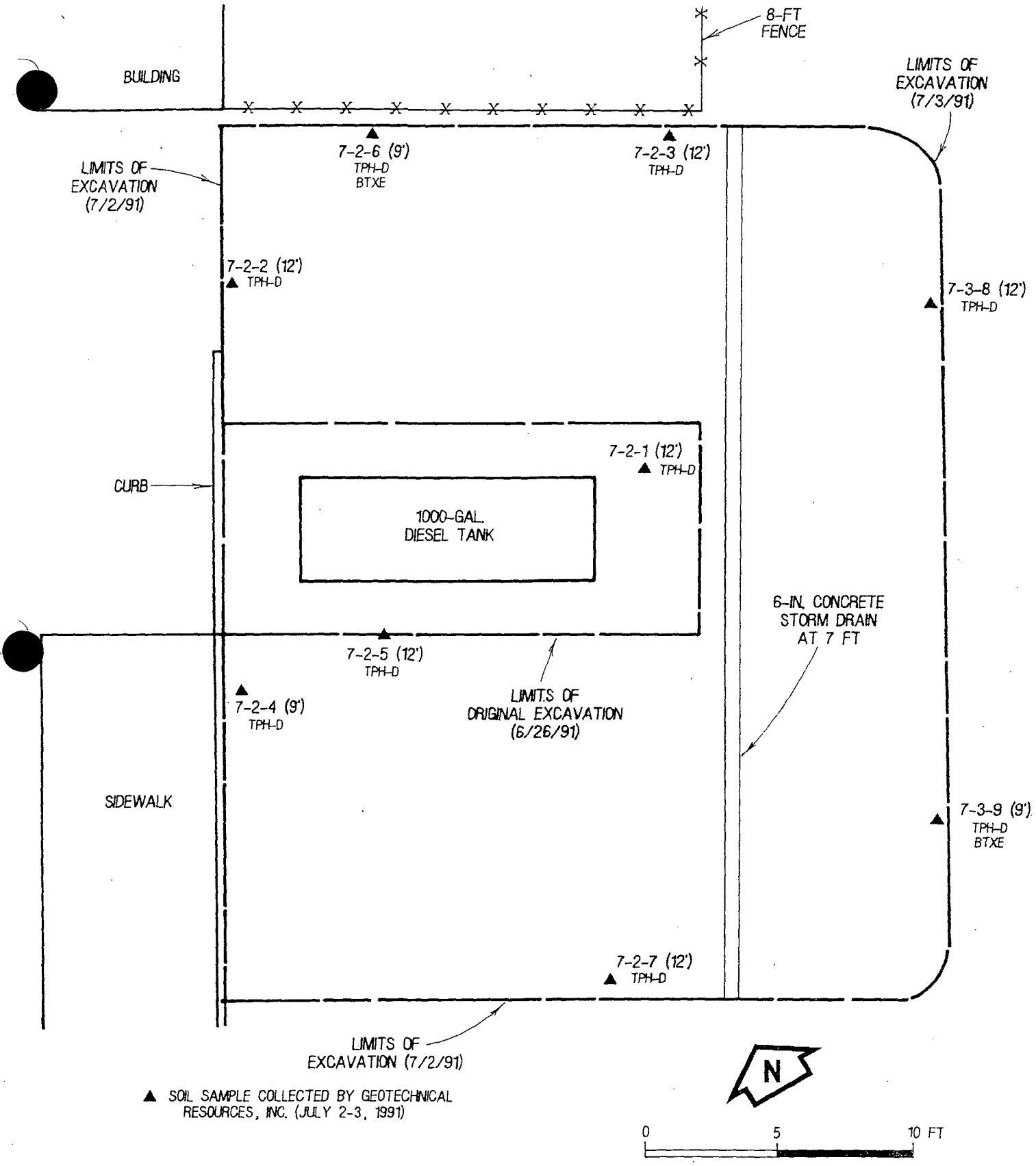
Sample I.D.	1-chlorooctadecane
892-7-2-1	86
892-7-2-2	94
892-7-2-3	92
892-7-2-4	77
892-7-2-5	91
892-7-2-6	91
892-7-2-7	76

METHOD: BTEX per EPA Method 8020
Soil results in ug/kg (ppb)

Sample I.D.	Benzene	Toluene	Ethyl Benzene	Total Xylene	Detection Limit
892-7-2-4	ND	ND	ND	ND	5.0
892-7-2-6	ND	ND	ND	ND	2.0
Lab Blank	ND	ND	ND	ND	1.0

8020 Surrogate Recoveries (%)

Sample I.D.	4-Bromofluorobenzene (65-125%)
892-7-2-4	82
892-7-2-6	93
Lab Blank	98



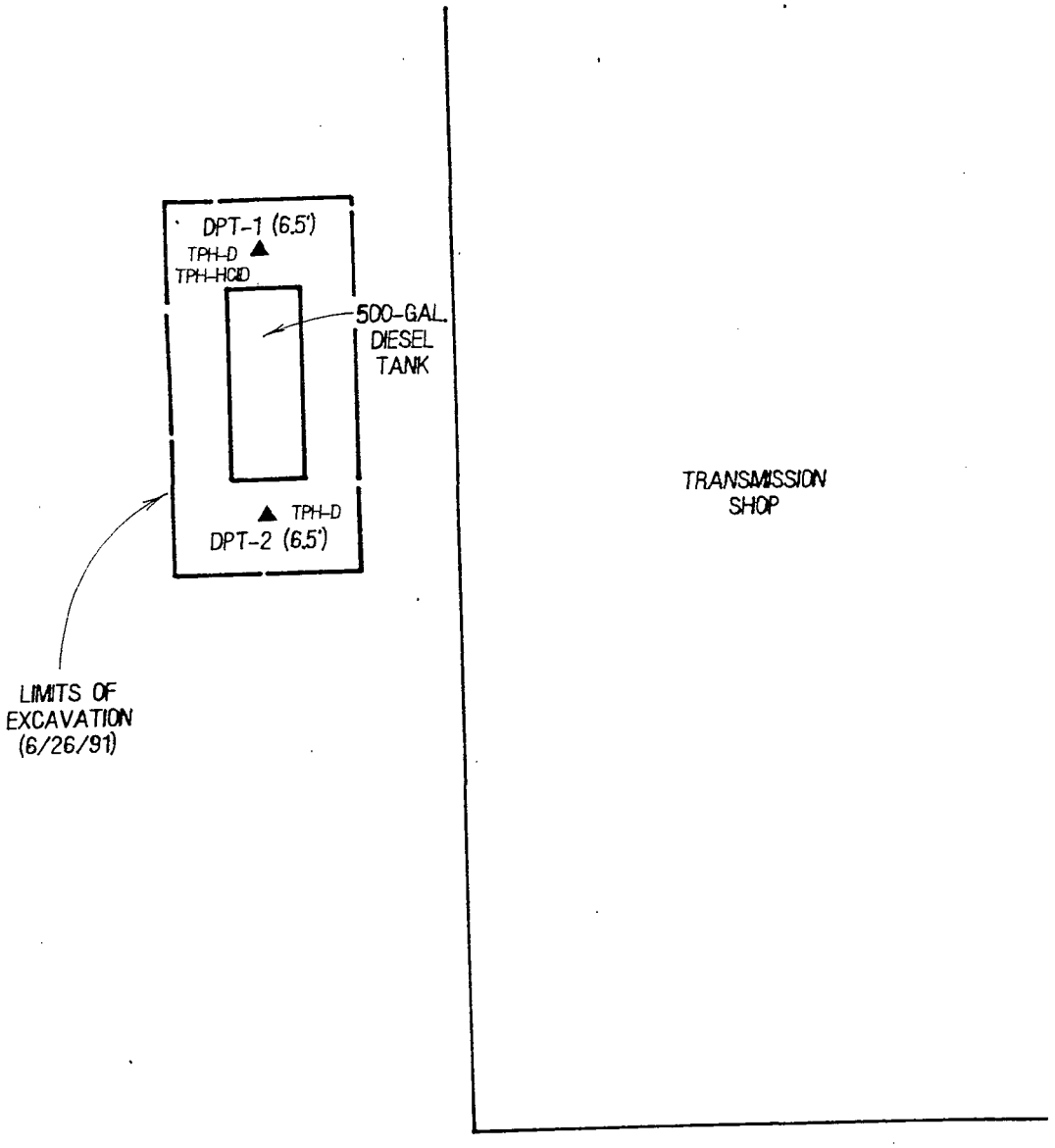
▲ SOIL SAMPLE COLLECTED BY GEOTECHNICAL RESOURCES, INC. (JULY 2-3, 1991)

GRI

PACIFIC DETROIT DIESEL-ALLISON
UST DECOMMISSION / SOIL REMEDIATION

OFFICE BUILDING TANK DETAIL

DEC. 1991 JOB NO. 892 FIG. 3



▲ SOIL SAMPLE COLLECTED BY GEOTECHNICAL RESOURCES, INC. (6/26/91)

N

0 10 20 FT

GRI

PACIFIC DETROIT DIESEL-ALLISON
UST DECOMMISSION / SOIL REMEDIATION

SHOP TANK DETAIL

DEC. 1991 JOB NO. 892 FIG. 4

ATTACHMENT A

LABORATORY TEST RESULTS

TRANSMISSION TANK

Decommissioning

On September 11, 1991, the "transmission tank," located at the northeast end of the transmission shop building, was decommissioned. This tank was used as a holding tank and separator for waste oil from a degreasing and parts cleaning operation associated with the transmission repair facility. The waste oil consisted primarily of diesel fuel and lubricating oils, but limited amounts of gasoline may have been involved from time to time. The degreasing and cleaning solutions used included ZEP Formula 940, Safety-Kleen Immersion Cleaner 609, and Safety-Kleen Parts Washing Solvent 105. Material safety data sheets for each of these compounds are provided in Attachment B. The tank was excavated and removed from the ground by Benting Construction, Inc. The tank was pumped, cleaned and triple-rinsed by Spencer, in preparation for off-site disposal. The tank is being stored temporarily on the site. The tank appeared to be sound and watertight, but one of the lines connected to it was poorly fitted and appeared to have been leaking. The soil in the vicinity of the tank and the piping connected to it was stained and exhibited the sheens and odors commonly associated with waste oil and commercial cleaning products.

On September 12, 1991, GRI notified DEQ that a release of waste oil and commercial cleaning products had been discovered and indicated that initial abatement measures, site characterization, and a cleanup investigation were underway and that, in the interest of minimizing environmental contamination and promoting more effective cleanup, remediation of the release would proceed without delay under the provisions of OAR 340-122-250.

Soil Characterization

Between September 11 and October 23, 1991, the excavation made during the decommissioning of the tank was expanded and deepened to determine the extent of the soil contamination described above. During this phase of the work, the excavated material and the sidewalls and bottom of the excavation were observed continuously by a GRI representative licensed by DEQ to supervise soil matrix cleanup projects. As the excavation proceeded, samples of the excavated soil were collected frequently and examined for indications of contamination. All of the excavated soil was considered to be contaminated and was stockpiled in the vicinity of the excavation for off-site disposal at the completion of the project.

As the apparent limits of soil contamination were identified, representative bottom and sidewall soil samples were collected. The sample locations are shown on Figure 5. Each of the samples was collected from a backhoe bucket which had been brought rapidly to the surface from the sample location. In each case, a clean stainless steel spoon was used to obtain the sample and transfer it, with minimum disturbance, to a clean wide-mouth glass jar provided by the laboratory. The jar was immediately sealed with a Teflon-lined screw cap. The containers were filled completely and all samples were packed in ice immediately for transport to the laboratory.

On October 1, 1991, a sample of the most severely contaminated soil was collected and analyzed for hydrocarbon characterization (DEQ TPH-HCID), total petroleum hydrocarbon (DEQ TPH-G and EPA 418.1M), halogenated volatile organics (EPA 8010), aromatic volatile organics (EPA (8020), TCLP metals (Cd, Cr, and Pb) and polychlorinated biphenols (EPA 8080) to determine the types of compounds present in the waste oil and solvents released from the tank. The results of these analyses are summarized below. A copy of the laboratory reports and chain-of-custody documents is included in Attachment A.

ANALYTICAL RESULTS OF MOST SEVERELY CONTAMINATED SOIL
(Transmission Tank)

	Sample 10-1-91A
TPH-HCID	
Gasoline	Detected
Diesel	Detected
Heavy Oil	Detected
TPH-G, mg/kg	845
TPH (EPA 418.1M), mg/kg	37,881
Aromatic Volatile Organics (EPA 8020), mg/kg	
Benzene	<3
Toluene	240
Ethylbenzene	<3
Xylenes	468
TCLP (3), µg/l	
Cadmium	0.12
Chromium	<0.10
Lead	1.0
PCB (EPA 8080), mg/kg	3.1
Halogenated Volatile Aromatics (EPA 8010), µg/kg (compounds detected only)	
1,1,1,2 Tetrachloroethane	530
1,1,1 Trichloroethane	1,790
Chlorobenzene	27,600
Bromobenzene	13,400
1,2 Dichlorobenzene	41,400
1,3 Dichlorobenzene	331,000
1,4 Dichlorobenzene	234,000

Based on the results of these analyses, we concluded that the compounds released included gasoline, diesel fuel, heavy oils, and a variety of halogenated volatile organics, but that metals and polychlorinated biphenols were not released in concentrations above the commonly accepted levels of concern.

The initial extension and deepening of the original decommissioning excavation was made on September 11, 1991. On that date, seven soil samples, designated 9-11-1, 2, 3, 7, 8, 9, and 10, were collected from the sidewalls and bottom of the expanded excavation from the locations and depths indicated on Figure 5. These samples were analyzed for a variety of organic and inorganic compounds, including hydrocarbon characterization (DEQ TPH-HCID), total petroleum hydrocarbon (EPA 418.1M), halogenated volatile organics (EPA 8010), aromatic volatile organics (EPA 8020), TCLP metals (Cd, Cr, and Pb), and polychlorinated biphenols (EPA 8080) to determine whether or not the limits of the contaminated soil had been reached. The results of these analyses are summarized below. A copy of the laboratory reports and chain-of-custody documents is included in Attachment A.

ANALYTICAL RESULTS OF SOIL SAMPLES FROM INITIAL EXCAVATION
(Transmission Tank)

	Sample I.D.						
	9-11-1	9-11-2	9-11-3	9-11-7	9-11-8	9-11-9	9-11-10
TPH-HCID							
Gasoline	ND	--	--	--	--	--	--
Diesel	ND	--	--	--	--	--	--
Oil	ND	--	--	--	--	--	--
TPH (EPA 418.1M), mg/kg	54	130	58	12	5.9	18	8.7
Aromatic Volatile Organics (EPA 8020), mg/kg							
Benzene	<0.15	--	<0.15	--	--	--	--
Toluene	<0.15	--	0.4	--	--	--	--
Ethylbenzene	<0.15	--	<0.15	--	--	--	--
Xylenes	<0.15	--	<0.15	--	--	--	--
TCLP(3), µg/l							
Cadmium	<0.04	--	<0.04	--	--	--	--
Chromium	<0.05	--	<0.05	--	--	--	--
Lead	<0.1	--	<0.1	--	--	--	--
PCB (EPA 8080), mg/kg	<0.2	--	0.28 (Aroclor 1260)	--	--	--	--
Halogenated Volatile Aromatics (EPA 8010), µg/kg	ND	--	ND	--	--	--	--

ND indicates not detected
-- indicates not analyzed

Based on the observations made as the excavation was expanded and the results of the analysis of representative soil samples collected from the sidewalls and bottom of the excavation, we concluded that the general limits of the soil contamination had been reached, but additional excavation was required in the northwestern portion of the excavation, in the vicinity of sample 9-11-2.

On October 14, 1991, the northwestern portion of the excavation was extended to a depth of 13 ft. The excavated soil was considered to be contaminated and was added to the stockpile of contaminated soil removed from the excavation made during the earlier phase of the work. Two representative soil samples, designated 9-14-11 and 9-14-12, were collected from the bottom of the deepened excavation, at the locations shown on Figure 5. These samples were analyzed for hydrocarbon characterization (DEQ TPH-HCID), total petroleum hydrocarbon (EPA 418.1M), aromatic volatile hydrocarbons (EPA 8020), and polychlorinated biphenols (EPA 8080) to determine whether or not the extended excavation had reached the limits of the soil contamination. The results of these analyses are summarized below. A copy of the laboratory reports and chain-of-custody documents are included in Attachment A.

ANALYTICAL RESULTS OF SOIL SAMPLES FROM EXTENDED EXCAVATION
(Transmission Tank)

	Sample I.D.	
	9-14-11	9-14-12
TPH-HCID, mg/kg		
Gasoline	<20	<20
Diesel	<50	<50
Heavy Oil	D	D
TPH (EPA 418.1M), mg/kg	460	770
Aromatic Volatile Organics (EPA 8020), mg/kg		
Benzene	<2	--
Toluene	<2	--
Ethylbenzene	<2	--
Xylenes	<2	--
PCB (EPA 8080), mg/kg	0.32 (Aroclor 1260)	--
Halogenated Volatile Aromatics (EPA 8010), µg/kg	--	--

-- indicates not analyzed
D indicates detected, but not quantified

Based on the observations made as the excavation was extended, and the results of the analysis of representative soil samples collected from the bottom of the excavation, we concluded that total petroleum hydrocarbons in excess of the Level II soil matrix cleanup standard for the site were still present beneath the northwestern portion of the excavation and that additional excavation was required.

On October 23, 1991, the northwestern portion of the excavation was extended to a depth of 16 ft. The excavated soil was considered to be contaminated and was added to the stockpile of contaminated soil excavated during the earlier phases of the work. A representative soil sample, designated 10-23-13, was

collected from the bottom of the deepened excavation, at the location shown on Figure 5. This sample was analyzed for total petroleum hydrocarbons (EPA 418.1M) to determine whether or not the extended excavation had reached the limits of the soil contamination. The laboratory results indicated that total petroleum hydrocarbons were not present in concentrations above the detection limit for the analysis (2 mg/kg). A copy of the laboratory report and the chain-of-custody documents is included in Attachment A.

Based on the observations made as the excavation was extended, and the results of the analysis of a representative soil sample collected from the bottom of the excavation, we concluded that all of the soil which had been contaminated in excess of the Level II soil matrix cleanup standards for the site (gasoline, 80 mg/kg and diesel, 500 mg/kg) by releases from the leaking tank had been excavated. Clean, imported sand was used to backfill the excavation on October 30, 1991, and the area was re-paved.

Groundwater Characterization

Groundwater was not encountered within the "transmission tank" excavation.

Soil Disposal

The contaminated soil from the excavation, approximately 120 cubic yards of well-sorted, fine- to medium-grained sand with a trace to some silt, is stockpiled at the site awaiting transport to the Hillsboro Landfill. A Special Waste Disposal Permit, Number 777, dated November 1, 1991, has been obtained from the landfill, but the material has not yet been taken to the landfill.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based on the examination of publications describing the general conditions in the vicinity of the site, visual observations and measurements made during work at the site, and examination and laboratory analysis of representative samples collected at the site:

1) The appropriate DEQ soil matrix level for the site is Level II, resulting in a cleanup standard of 80 mg/kg (gasoline) and 500 mg/kg (diesel).

2) Three underground storage tanks and the piping and fill operations associated with them were responsible for the release of an undetermined amount of diesel fuel (office building tank and shop tank) and waste oil and solvents (transmission tank).

3) The soil in the immediate vicinity of the tanks was contaminated.

4) Groundwater in the vicinity of the tanks was not contaminated.

5) The tanks were properly decommissioned. All of the soil contaminated at concentrations in excess of the soil matrix cleanup levels for the site was excavated and either remediated on-site by passive aeration or taken to an approved disposal facility.

Based on the work described in this report and on the conclusions outlined above, it is our opinion that the requirements of OAR Chapter 340, Division 150 (Underground Storage Tank Regulations) and OAR Chapter 340, Division 122 (Cleanup Rules for Leaking Petroleum UST Systems) have been fulfilled and further action is not required.

LIMITATIONS

This report has been prepared to aid Pacific Detroit Diesel-Allison in documenting the underground storage tank decommissioning, soil remediation, and groundwater quality investigation work performed at the described site. The scope is limited to the locations and activities described herein. In the performance of work of this type, specific information is obtained at specific locations at specific times. However, it is acknowledged that variations in conditions may exist between sampling locations and with time. The conclusions and recommendations presented in this report are based on our understanding of the project and the results of our investigations and testing as described in this report. No other warranty or representation, either expressed or implied, is included or intended.

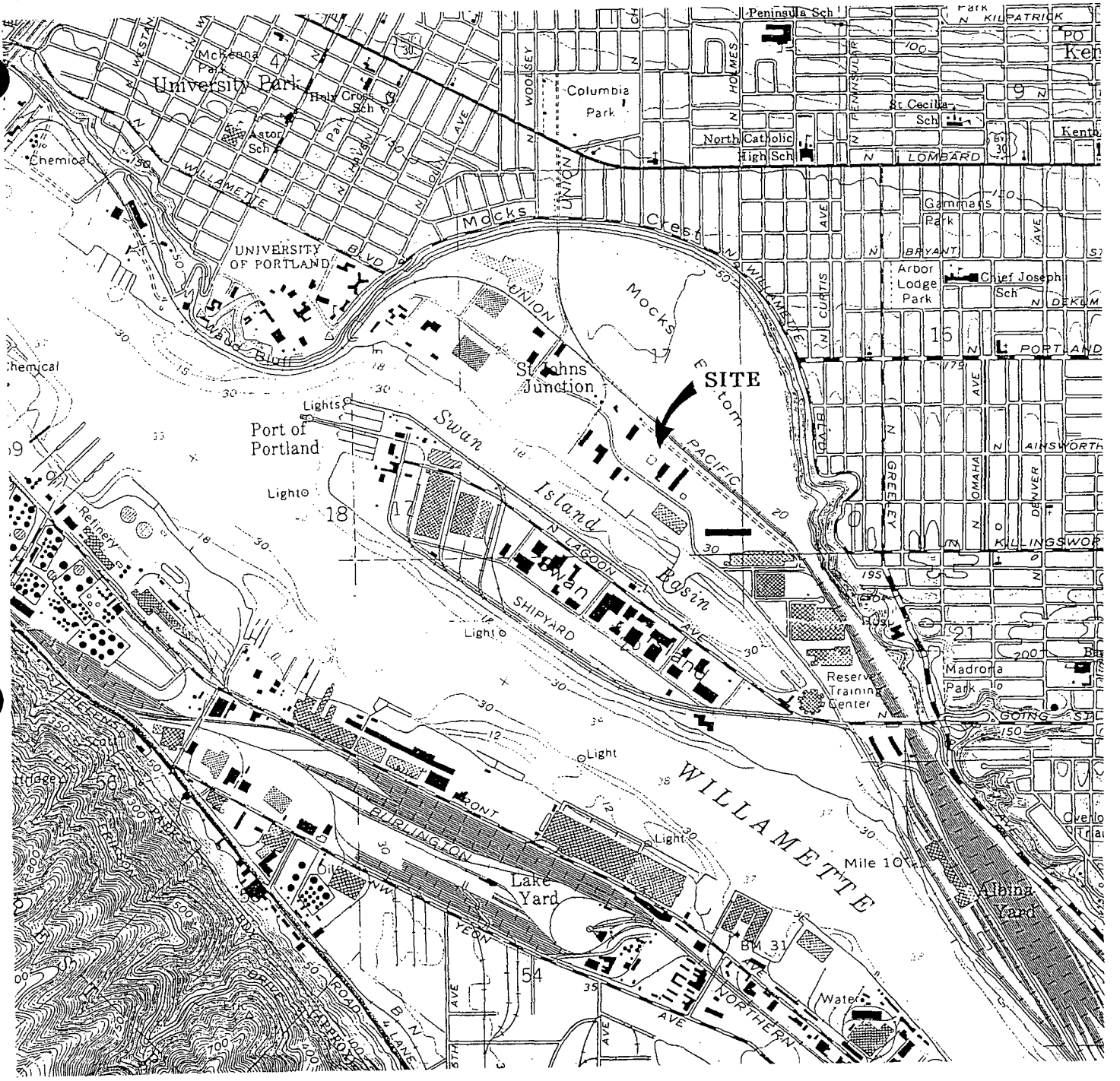
If you have any questions regarding this project, please contact us at your earliest convenience.

Sincerely,

GEOTECHNICAL RESOURCES, INC.

David D. Driscoll, P.E.
Principal

Willard S. Titus, P.G.
Project Geologist



USGS TOPOGRAPHIC MAP
PORTLAND, OREG. QUAD

N

0 1/2 1 MILE

GRI

PACIFIC DETROIT DIESEL-ALLISON
UST DECOMMISSION / SOIL REMEDIATION

VICINITY MAP

DEC. 1991 JOB NO. 892 FIG. 1

PACIFIC ENVIRONMENTAL LABORATORY INC.
9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644- 0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

2- 3 DAY RUSH

COMPANY GEOTECHNICAL RESOURCES PROJECT NAME DETROIT DIESEL LAB PROJECT NUMBER 91-2055

PROJECT MANAGER W.S. TITUS PROJECT NUMBER 892

COLLECTED BY W.S. TITUS P.O. NUMBER 892 RUSH ☒ YES ☐ NO ~~24 HOUR~~ WSP

COMMENTS

SAMPLES RECEIVED AT 4°C ☐ YES ☐ NO

SAMPLES IN APPROPRIATE CONTAINERS ☐ YES ☐ NO

PROVIDE VERBAL RESULTS ☐ YES ☐ NO

PROVIDE PRELIMINARY FAX RESULTS ☐ YES ☐ NO

PROVIDE FINAL FAX RESULTS ☐ YES ☐ NO

SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEQ	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	REMARKS
892-7-2-1	7/2	AM		X						X											
892-7-2-2	7/2	AM		X						X											
892-7-2-3	7/2	AM		X						X											
892-7-2-4	7/2	PM		X				X		X				X							
892-7-2-5	7/2	PM		X						X											
892-7-2-6	7/2	PM		X						X				X							
892-7-2-7	7/2	PM		X						X											

FAX RESULTS TO 297-1696

BILL TITUS AT

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
W.S. Titus	GEOTECHNICAL RESOURCES	7/2/91	Julie Reynolds	1550 PER 7-2-91
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

RECEIVED
JUL 24 1991
GEOTECHNICAL RESOURCES, INC.

July 17, 1991

Geotechnical Resources, Inc.
7412 S.W. Beaverton-Hillsdale Hwy.
Portland, OR 97225

Attn: William Titus

Re: JOB #892
P.O. #892
PROJECT - Detroit Diesel
PEL #91-2073

Enclosed is the lab report for your samples which were received on July 3, 1991.

I. Sample Description

Two Soil Samples
One Water Sample

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Howard Boorse
QA/QC Manager

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2073
CLIENT: Geotechnical Resources, Inc.
JOB REFERENCE: 892
P.O. NUMBER: 892
PROJECT: Detroit Diesel
DATE: July 17, 1991
ITEMS: Two Soil Samples
One Water Sample

METHOD: TPH-D per Oregon DEQ
Results in mg/kg (ppm)

Sample I.D.	Hydrocarbon	Carbon Range	Comments
892-7-3-8	ND	--	
892-7-3-9	45	C_{20}-C_{28}	
	--	C_{28}-C_{35}	j.
Lab Blank	ND	--	
Detection Limit	25	C_{10}-C_{28}	
Detection Limit	25	C_{28}-C_{40}	

j. Contains a heavy petroleum product with the carbon range listed. However, the product cannot be quantitated by this method.

TPH-D Surrogate Recoveries (%)

Sample I.D.	1-chlorooctadecane
892-7-3-8	84
892-7-3-9	78

METHOD: Total Petroleum Hydrocarbons per EPA 418.1
Results in mg/L (ppm)

Sample I.D.	TPH
892-7-3-W1	ND
Lab Blank	ND
Detection Limit	0.5

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2073
CLIENT: Geotechnical Resources, Inc.
JOB REFERENCE: 892
P.O. NUMBER: 892
PROJECT: Detroit Diesel
DATE: July 17, 1991
ITEMS: Two Soil Samples
One Water Sample

METHOD: BTEX per EPA 8020
Soil results in ug/kg (ppb)

Sample I.D.	Benzene	Toluene	Ethyl Benzene	Total Xylene	Detection Limit
892-7-3-9	ND	ND	ND	ND	2.0
Lab Blank	ND	ND	ND	ND	1.0

8020 Surrogate Recoveries (%)

Sample I.D.	4-Bromofluorobenzene (65-125%)
892-7-3-9	84
Lab Blank	98

METHOD: BTEX per EPA 8020
Water results in ug/L (ppb)

Sample I.D.	Benzene	Toluene	Ethyl Benzene	Total Xylene	Detection Limit
892-7-3-W1	ND	ND	ND	ND	1.0
Lab Blank	ND	ND	ND	ND	1.0

8020 Surrogate Recoveries (%)

Sample I.D.	4-Bromofluorobenzene (75-120%)
892-7-3-W1	102
Lab Blank	89

PACIFIC ENVIRONMENTAL LABORATORY INC.

9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644- 0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

MPANY GEOTECHNICAL RESOURCES, INC PROJECT NAME DETROIT DIESEL LAB PROJECT NUMBER 91-2073

OJECT MANAGER W.S. TITUS PROJECT NUMBER 892 (24 HR) - Next day

LLECTED BY W.S. TITUS P.O. NUMBER 892 RUSH ☒ YES ☐ NO

)MMENTS

SAMPLES RECEIVED AT 4°C ☐ YES ☐ NO

SAMPLES IN APPROPRIATE CONTAINERS ☐ YES ☐ NO

PROVIDE VERBAL RESULTS ☒ YES ☐ NO

PROVIDE PRELIMINARY FAX RESULTS ☒ YES ☐ NO

PROVIDE FINAL FAX RESULTS ☐ YES ☒ NO

SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEQ	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	REMARKS
892-7-3-8	7/3	PM		X			1			X											RUSH
892-7-3-9	7/3	PM		X			1			X				X							RUSH
892-7-3-W1	7/3	PM			X		1				X			X							NO RUSH

ALL SAMPLES WILL BE DISPOSED OF 30 DAYS AFTER RECEIPT

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
[signature]	GEOTECHNICAL RESOURCES	7/3/91	[signature]	PEL 7-3-91 1455
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

Report Date: August 26, 1991
Job#: TP-910814Z-3
Project: Pacific Detroit Diesel

Attention: Bill Titus
Geotechnical Resources, Inc.
7412 SW Beaverton-Hillsdale Hwy
Suite 102
Portland, OR 97225

SAMPLE INFORMATION:
Date Samples Were Received By Laboratory: 08/14/91

Lab No.	Field Identification	Sample Matrix	Date
1	PDD-1	Soil	08/14/91
2	PDD-2	Soil	08/14/91
3	PDD-3	Soil	08/14/91

ANALYTICAL RESULTS:

Analysis Performed: TPH-418.1 Modified, by the Oregon DEQ Method, IR Spectrophotometry.

PARAMETER	DETECTION LIMIT	SAMPLE #1 RESULTS	SAMPLE #2 RESULTS	SAMPLE #3 RESULTS
Total Petroleum Hydrocarbons	5	120	47	30

Results expressed as mg/kg unless otherwise noted.

Sincerely,

Renee Chauvin,
Technical Director

RJC/mlh

This report is for the sole and exclusive use of the above-named client. Samples are retained 15 days from the report date, or until holding time expires. Results pertain only to samples submitted.

FFEY LABORATORIES INC.
123 N.E. WHITAKER WAY, PORTLAND, OR 97230
3) 254-1794 • FAX (503) 254-1452

COFFEY LABORATORIES - PENDLETON BRANCH
287 S.E. FIRST, PENDLETON, OR 97801
(503) 276-0385

AIN OF CUSTODY

OJECT #:	PROJECT NAME: Pacific Detroit Diesel	P.O. #: ←	PAGE 1 of 1 PAGES PLEASE PRINT OR TYPE	FOR LABORATORY USE ONLY

MPANY NAME: GRI
PORT ATTENTION: Bill Titus
FAX:
JOB #: TP910814-3
MPLES COLLECTED BY: SLM
CUSTABBR: GeoTech Res

LD IDENTIFICATION: E LINE PER SAMPLE CONTAINER	LAB LOC	LAB ID	COLLECTION DATE	COLLECTION TIME	MEDIA	ANALYSIS REQUESTED	ANALYSIS REMARKS
PDD-1		1	8/14/91	PM	Soil	DEQ TPH 418.1	FAX
PDD-2		2	↓	↓	↓	↓	
PDD-3		3	↓	↓	↓	↓	

ELINQUISHED BY: Sharon T Malone	DATE/TIME 8-14-91	RECEIVED BY:	DATE/TIME	LAB USE
ELINQUISHED BY:	DATE/TIME	RECEIVED BY LAB: [signature]	DATE/TIME	
AMPLE REMARKS:		LEVEL 1 2 3 4	EXPRESS UPS MAIL CXX GREY TAXI LAB	

/HITE COPY - COFFEY LABORATORIES

PINK COPY - CLIENTS COPY

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CHAIN OF CUSTODY INSTRUCTIONS ON BACK OF PINK COPY

/90)

292

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

July 10, 1991

Oregon Pacific Tank Services, Inc.
30400 S.W. Bald Peak Road
Hillsboro, OR 97123

Attn: Patti Nichols

Re: JOB #882
PROJECT - Detroit Diesel
PEL #91-1997

Enclosed is the lab report for your samples which were received on June 26, 1991.

I. Sample Description

Three Soil Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Howard Boorse
QA/QC Manager

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-1997
CLIENT: Oregon Pacific Tank Services, Inc.
JOB REFERENCE: 882
PROJECT: Detroit Diesel
DATE: July 10, 1991
ITEMS: Three Soil Samples

METHOD: TPH-HCID per Oregon DEQ
Detection limits in mg/kg (ppm)

Sample I.D.	Gasoline	Diesel	Bunker/ Related
OWS-1	ND	ND	Detected
DTT-1	ND	ND	ND
Lab Blank	ND	ND	ND
Detection Limit	20	50	--

TPH-HCID Surrogate Recoveries (%)

Sample I.D.	1-chlorooctadecane
OWS-1	95
DTT-1	103
Control Limits	50-150

METHOD: TPH-D per Oregon DEQ
Results in mg/kg (ppm)

Sample I.D.	Hydro-carbon	Carbon Range
DTT-1	ND	---
DTT-2	250	C_{12}-C_{28}
Lab Blank	ND	---
Detection Limit	25	C_{10}-C_{28}

TPH-D Surrogate Recoveries (%)

Sample I.D.	1-chlorooctadecane
DTT-1	74
DTT-2	83
Control Limits	50-150

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-1997
CLIENT: Oregon Pacific Tank Services, Inc.
JOB REFERENCE: 882
PROJECT: Detroit Diesel
DATE: July 10, 1991
ITEMS: Three Soil Samples

METHOD: TPH-418.1M per Oregon DEQ
Results in mg/kg (ppm)

Sample I.D.	Hydro-carbon
OWS-1	88
Lab Blank	ND
Detection Limit	5

PACIFIC ENVIRONMENTAL LABORATORY INC.

9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644- 0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

COMPANY OREGON PACIFIC TANK | PROJECT NAME DETROIT DIESEL | LAB PROJECT NUMBER 91-1997

PROJECT MANAGER PATTI NICHOLS | PROJECT NUMBER 882

COLLECTED BY W.S. TITUS | P.O. NUMBER | RUSH ☐ YES ☐ NO

COMMENTS

SAMPLES RECEIVED AT 4°C ☐ YES ☐ NO 16.8° C

SAMPLES IN APPROPRIATE CONTAINERS ☒ YES ☐ NO

PROVIDE VERBAL RESULTS ☐ YES ☐ NO

PROVIDE PRELIMINARY FAX RESULTS ☒ YES ☐ NO

PROVIDE FINAL FAX RESULTS ☐ YES ☐ NO

SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	ANALYSES TO BE PERFORMED: TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEQ	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	REMARKS
OWS-1	6/26	PM		X				X			X										RUSH
DTT-1	6/26	PM		X				X		X											NO RUSH
DTT-2	6/26	PM		X						X											NO RUSH

PLEASE FAX RESULTS TO BILL TITUS @ 297-1696

ALL SAMPLES WILL BE DISPOSED OF 30 DAYS AFTER RECEIPT

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
		6/24/91 1455		PEL 6/26/91
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

Report Date: September 27, 1991
Job#: TP-910912M-7
PO#: 948
Project#: 948
Project: Pacific
Detroit Diesel

Attention: Bill Titus
Geotechnical Resources, Inc.
7412 SW Beaverton-Hillsdle Hwy
Suite 102
Portland, OR 97225

SAMPLE INFORMATION:
Date Samples Were Received By Laboratory: 09/12/91

Lab No.	Field Identification	Sample Matrix	Date
1	Trans-9-11-1	Soil	09-11-91
2	Trans-9-11-2	Soil	09-11-91
3	Trans-9-11-3	Soil	09-11-91
4	Trans-9-11-7	Soil	09-11-91
5	Trans-9-11-8	Soil	09-11-91
6	Trans-9-11-9	Soil	09-11-91
7	Trans-9-11-10	Soil	09-11-91

ANALYTICAL RESULTS ARE ON THE FOLLOWING PAGE(S)

Sincerely,

Victor A. Perry,
Quality Assurance

Sincerely,

Susan M. Coffey,
President

SMC/mlh

This report is for the sole and exclusive use of the above-named client. Samples are retained 15 days from the report date, or until holding time expires. Results pertain only to samples submitted.

Job#: TP-910912M-7

Geotechnical Resources, Inc.
Page 2

Sample ID: Trans-9-11-1

Analysis Performed: TPH-HCID qualitative scan for Hydrocarbons, by GC/FID.

Summary of Qualitative Screening Test:*

	SAMPLE RESULTS
Gasoline detected by TPH-HCID	
Gasoline not detected by TPH-HCID	√
Diesel detected by TPH-HCID	
Diesel not detected by TPH-HCID	√
Hydrocarbons heavier than C28 detected	

Recommended further analysis:

TPH-G	
TPH-D	
TPH-418.1	
None	√

* Surrogate spike recoveries meet DEQ quality control requirements.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in soil by modified EPA Method 8080,GC/ECD.

SAMPLE ID	PCB	AROCLOR
Trans-9-11-3	0.28	1260
Trans-9-11-1	ND	---
Blank	ND	---

Detection Limit: 0.2 mg/kg

Results expressed as mg/kg unless otherwise noted.

REPORT CONTINUES

Job#: TP-910912M-7

Geotechnical Resources, Inc.
Page 3

Sample ID:
#1 Trans-9-11-1
#2 Trans-9-11-2
#3 Trans-9-11-3
#4 Trans-9-11-7
#5 Trans-9-11-8
#6 Trans-9-11-9
#7 Trans-9-11-10

Analysis Performed: TPH-418.1 Modified, by the Oregon DEQ Method, IR Spectrophotometry.

PARAMETER	DETECTION LIMIT	SAMPLE #1 RESULTS	SAMPLE #2 RESULTS	SAMPLE #3 RESULTS
Total Petroleum Hydrocarbons	5	54	130	58

PARAMETER	SAMPLE #4 RESULTS	SAMPLE #5 RESULTS	SAMPLE #6 RESULTS	SAMPLE #7 RESULTS
Total Petroleum Hydrocarbons	12	5.9	18	8.7

PARAMETER	BLANK
Total Petroleum Hydrocarbons	ND

Results expressed as mg/kg unless otherwise noted.

ND means none detected at or above the detection limit listed.

SUBJECT: TCLP Analysis

ANALYTE	METHOD	DETECTION LIMIT	SAMPLE #1 RESULTS	SAMPLE #3 RESULTS	EPA LIMIT
Cadmium	*	0.04	ND	ND	1.0
Chromium	*	0.05	ND	ND	5.0
Lead	*, 7420	0.1	ND	ND	5.0

Results are reported in milligrams per liter (mg/L)

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

REPORT CONTINUES

Job#: TP-910912M-7

Geotechnical Resources, Inc.
Page 4

Analysis Performed: Purgeable Halocarbons and Aromatics in soil by EPA Methods 8010/8020, GC/PID/HED.

Sample ID: #1 Trans-9-11-1
#3 Trans-9-11-3

ANALYTE	DETECTION LIMITS	LABORATORY BLANK	SAMPLE #1 RESULTS	SAMPLE #3 RESULTS
Benzene	0.15	ND	ND	ND
Bromodichloromethane	0.15	ND	ND	ND
Bromoform	0.15	ND	ND	ND
Bromomethane	0.30	ND	ND	ND
Carbon tetrachloride	0.15	ND	ND	ND
Chlorobenzene	0.15	ND	trace,<0.15	ND
Chloroethane	0.30	ND	ND	ND
2-Chloroethylvinylether	0.30	ND	ND	ND
Chloroform	0.15	ND	ND	ND
Chloromethane	0.30	ND	ND	ND
Dibromochloromethane	0.15	ND	ND	ND
1,2-Dichlorobenzene	0.15	ND	ND	ND
1,3-Dichlorobenzene	0.15	ND	ND	ND
1,4-Dichlorobenzene	0.15	ND	trace,<0.15	ND
Dichlorodifluoromethane	0.60	ND	ND	ND
1,1-Dichloroethane	0.15	ND	ND	ND
1,2-Dichloroethane	0.15	ND	ND	ND
1,1-Dichloroethene	0.15	ND	ND	ND
trans-1,2-Dichloroethene	0.15	ND	ND	ND
1,2-Dichloropropane	0.15	ND	ND	ND
cis-1,3-Dichloropropene	0.15	ND	ND	ND
trans-1,3-Dichloropropene	0.15	ND	ND	ND
Ethylbenzene	0.15	ND	ND	ND
Methylene chloride	0.3	ND	ND	ND
Toluene	0.15	ND	ND	0.4
1,1,2,2-Tetrachloroethane	0.15	ND	ND	ND
Tetrachloroethene	0.15	ND	ND	ND
1,1,1-Trichloroethane	0.15	ND	ND	ND
1,1,2-Trichloroethane	0.15	ND	ND	ND
Trichloroethene	0.15	ND	ND	ND
Trichlorofluoromethane	0.60	ND	ND	ND
Vinyl chloride	0.60	ND	ND	ND
Total Xylenes	0.15	ND	trace,<0.15	ND

Results expressed as mg/kg unless otherwise noted.

ND means none detected at or above the detection limit listed.

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

FEY LABORATORIES INC.
23 N.E. WHITAKER WAY, PORTLAND, OR 97230
3) 254-1794 • FAX (503) 254-1452

COFFEY LABORATORIES - PENDLETON BRANCH
287 S.E. FIRST, PENDLETON, OR 97801
(503) 276-0385

AIN OF CUSTODY

JECT #:	PROJECT NAME:	P.O. #:	PAGE 1 of 1 PAGES	FOR LABORATORY USE ONLY
948	PACIFIC DETROIT DIESEL	948	PLEASE PRINT OR TYPE	

MPANY NAME: GEOTECHNICAL RESOURCES, INC.
ORT ATTENTION: W.S. TITUS
JOB #: TP910712-1117

PLES COLLECTED BY: W.S. TITUS
CUSTABBR: Geotech Res

D IDENTIFICATION: INE PER SAMPLE CONTAINER	LAB LOC	LAB ID	COLLECTION DATE	COLLECTION TIME	MEDIA	ANALYSIS REQUESTED	ANALYSIS REMARKS
NS-9-11-1			9/11/91	PM	SOIL	TPH(HCID), TPH(418.1), 601/602, TCLP(3), PCB	
ANS-9-11-2			9/11/91	PM	SOIL	TPH (418.1)	
ANS-9-11-3			9/11/91	PM	SOIL	TPH(418.1), 601/602, TCLP(3), PCB	
ANS-9-11-7			9/11/91	PM	SOIL	TPH (418.1)	
ANS-9-11-8			9/11/91	PM	SOIL	TPH (418.1)	
ANS-9-11-9			9/11/91	PM	SOIL	TPH (418.1)	
ANS-9-11-10			9/11/91	PM	SOIL	TPH (418.1)	

TPH(418.1) IS BUNKER/LUBE QUANTITATIVE ANALYSIS, NOT "SCREEN"

PLEASE FAX PRELIMINARY RESULTS TO W.S. TITUS @ 227-1696 ASAP.

NQUISHED BY: W.S. Titus	DATE/TIME 9/12/91	RECEIVED BY:	DATE/TIME
NQUISHED BY:	DATE/TIME	RECEIVED BY LAB: John S. [illegible]	DATE/TIME 9/12/91 11:50

PLE REMARKS:

LEVEL 1 2 3 4 EXPRESS UPS MAIL GXX GREY TAXI LAB

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HAYMOND & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS

1128 S.W. 13TH, PORTLAND, OR 97205
(503) 223-2737 FAX: 223-6168

October 7, 1991

Geotechnical Resources, Inc.
7412 S.W. Beaverton-Hillsboro Hwy.
Suite 102
Portland, OR 97225

PROJECT NAME/SITE: DET DIESEL XMN
PO #: 948
PROJECT #: 948

(LAB FILE: GEO4.DOC)

LAB ID/ FIELD ID:

2231/ 948-10-1-91-A SOIL

TPH-HCID:	GASOLINE	DIESEL	HEAVY OIL
	Detected	Detected	Detected

TPH-G: 845 mg/kg gasoline fractions

TPH-418.1: 37,881 mg/kg Total Petroleum Hydrocarbons

BTEX: Benzene ND; Toluene 240 ug/kg;
by Method 8020 Ethylbenzene ND; Xylenes 468 ug/kg;

EPA METHOD 8010:	ug/l*	EQL**
1, 1 Dichloroethane	ND	(2)
1,1 Trichloroethane	ND	(1)
1,2 Dichloroethane	ND	(1)
1,2 Dichloropropane	ND	(1)
1,1,2 Trichloroethane	ND	(1)
1,1,1,2 Tetrachloroethane	530 ug/kg	(100)
1,1,2,2 Tetrachloroethane	ND	(1)
1,1,1 Trichloroethane	1,790 ug/kg	(64)
Chlorobenzene	27,600 ug/kg	(64)
Bromobenzene	13,400 ug/kg	(64)
1,2 dichlorobenzene	41,400 ug/kg	(64)
1,3 dichlorobenzene	331,000 ug/kg	(64)
1,4 dichlorobenzene	234,000 ug/kg	(64)
Chloroform	ND	(1)
Carbon tetrachloride	ND	(2)
Trichloroethylene	ND	(3)
Dibromomethane	ND	(9)
Tetrachloroethylene	ND	(1)
Bromoform	ND	(3)
1,2,3 Trichloropropane	ND	(9)

* micrograms per kilogram
** Estimated Quantification Limit

(continued)

HAYMOND & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS

1128 S.W. 13TH, PORTLAND, OR 97205
(503) 223-2737 FAX: 223-6168

October 7, 1991

Geotechnical Resources, Inc.
7412 S.W. Beaverton-Hillsboro Hwy.
Suite 102
Portland, OR 97225

PROJECT NAME/SITE: DET DIESEL XMN
PO #: 948
PROJECT #: 948

(LAB FILE: GEO4.DOC)

(continued)

TPH-HCID Parameters:
1) If possible, identification is by comparison to reference chromatograms. If identification can not be made by comparison, then compounds from C_6 to C_{10} are called "Gasoline"; from C_{11} to C_{28} are called "Diesel"; and C_{29} and beyond are called "Heavy Oil".
2) The reporting limit for Gasoline is 20 mg/kg.
3) The reporting limit for Diesel is 50 mg/kg.
4) The reporting limit for Heavy Oil is 50mg/kg.

BTEX (602/8020) Parameters for Water
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is 3ug/l (ppb).
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

BTEX (602/8020) Parameters for Soil
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is .1 mg/Kg
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

TPH-G Parameters:
1) Duplicate analyses agree to within 10%.
2) The reporting limit is 10 mg/kg.
3) Laboratory blank showed no gasoline.

TPH-418.1 Parameters for Soil
1) The detection limit for TPH is 2 mg/kg.
2) The limit of quantitation is 6 mg/kg.
3) The laboratory blank showed no detected TPH.

TPH-418.1 Parameters for Water
1) The detection limit for TPH is .1 mg/l.
2) The limit of quantitation is .3 mg/l.
3) The laboratory blank showed no detected TPH.

OAL

A DIVISION OF PGE

OREGON ANALYTICAL LABORATORY
14855 SW Old Scholls Ferry Road
Beaverton, OR 97007
(503) 644-5300
Fax: (503) 671-1404

HAYMOND & ASSOCIATES, INC.
1128 SW 13TH.
PORTLAND, OR. 97205

REVIEWED BY: SPH

REVIEW DATE: 10/15/91

SARAH HAYMOND
223-2737 (FAX 223-6168)
PO#948

PCB ANALYSIS OF SOLIDS
BY EPA METHODS 3540 AND 8080

SAMPLE ID:		948-10-1-91-A
OAL ID: 25-I349-		01404
SAMPLE DATE:		10/1/91
PCB	MG/KG	3.1

ND = NONE DETECTED(<0.05 MG/KG)
NA = NOT ANALYZED

OAL

A DIVISION OF FCE

OREGON ANALYTICAL LABORATORY
14855 SW Old Scholls Ferry Road
Beaverton, OR 97007
(503) 644-5300
Fax: (503) 671-1404

HAYMOND & ASSOCIATES, INC.
1128 SW 13TH.
PORTLAND, OR. 97205

REVIEWED BY: SRH

REVIEW DATE: 10/15/91

SARAH HAYMOND
223-2737 (FAX 223-6168)
PO#948

TCLP-WASTE OIL METALS
EPA METHODS 1311 AND 6010

SAMPLE ID:		948-10-1-91-A
OAL ID: 25-I349-		01404
SAMPLE DATE:		10/1/91
MATRIX:		SOIL
EXTRACTION DATE:		10-07-91
CADMIUM	PPM	0.12
CHROMIUM	PPM	<0.10
LEAD	PPM	1.00

METAL	REGULATORY LIMIT(MG/L)
CADMIUM	1.0
CHROMIUM	5.0
LEAD	5.0

CHAIN OF CUSTODY J349

HAYMOND & ASSOCIATES, INC.

ENVIRONMENTAL SCIENTISTS

1128 S.W. 13th, Portland, OR 97205
(503) 223-2737 FAX: 223-6168

CHAIN OF CUSTODY

PROJECT # 948	PROJECT NAME: DET Diesel XMN	P.O. # 948	TODAY'S DATE: 10-1-91
COMPANY NAME: Geotechnical Resources		PHONE: 292-2621	
REPORT ATTENTION: Bill Titus		FAX: 297-1696	
SAMPLES COLLECTED BY: Bill Titus		DATE COLLECTED:	

FIELD I.D.	MEDIA	CONTAINER	PRESERVATIVE	ANALYSIS REQUIRED	
948-10-1-91-A	soil	glass jar	4°C	PCB 8080	2231 2781
OAL# 25-J349-01404				*TCLP: Chromium	2457
				cadmium	
			Note: Sample was recieved at ambient temp. SRA	lead	

RELINQUISHED BY: Sarah Haymond	DATE/TIME 10-7-91 10:35	RECEIVED BY: BS Oxley	DATE/TIME 10/7/91 10:38
RELINQUISHED BY: BS Oxley	DATE/TIME 10-7-91 1:45	RECEIVED BY LAB: D Wand	DATE/TIME 10/7/91 1.45

REMARKS: Warm Sample / neg SA

EXPRESS UPS MAIL CXL GREY TAXI CAB

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CHAIN OF CUSTODY

ENVIRONMENTAL SCIENTISTS
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(503) 223-2737 FAX: 223-6168

CHAIN OF CUSTODY

PROJECT # 948	PROJECT NAME: DET DIESEL XMN	P.O. # 948	TODAY'S DATE: 10/1/91
COMPANY NAME: GEOTECHNICAL RESOURCES		PHONE: 292-2621	
REPORT ATTENTION: BILL TITUS		FAX: 297-1696	
SAMPLES COLLECTED BY: BILL TITUS		DATE COLLECTED: 10/1/91	

FIELD I.D.	MEDIA	CONTAINER	PRESERVATIVE	ANALYSIS REQUIRED
948-10-1-91-A	SOIL	GLASS	~~NONE~~ 4°C	TPH(HCID) AND APPROPRIATE TPH(G),(D) OR 418-1 2231
				PLEASE FAX PRELIMINARY RESULTS ASAP.

RELINQUISHED BY: [signature]	DATE/TIME 10/1/91	RECEIVED BY:	DATE/TIME
RELINQUISHED BY:	DATE/TIME	RECEIVED BY LAB: A. Haymond	DATE/TIME 10-1-91 1:00

REMARKS:

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ENVIRONMENTAL SCIENTISTS
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(503) 223-2737 FAX: 223-6168

CHAIN OF CUSTODY

PROJECT # 948	PROJECT NAME: DET Diesel XMN	P.O. # 948	TODAY'S DATE: 10-1-91
COMPANY NAME: Geotechnical Resources		PHONE: 292-2621	
REPORT ATTENTION: Bill Titus		FAX: 297-1696	
SAMPLES COLLECTED BY: Bill Titus		DATE COLLECTED:	

FIELD I.D.	MEDIA	CONTAINER	PRESERVATIVE	ANALYSIS REQUIRED	
948-10-1-91-A	soil	glass jar	<10°C	PCB 8080	2231
				TCLP: chromium	
				cadmium	
				lead	

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
Sarah Haymond	10-7-91 10:35	BS-Ardyl	10/7/91 10:38
RELINQUISHED BY:	DATE/TIME	RECEIVED BY LAB:	DATE/TIME

REMARKS:

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Fax: (503) 671-1404

GEOTECHNICAL RESOURCES, INC.
7412 SW BEAVERTON-HILLSDALE
SUITE 102
PORTLAND, OR. 97225
BILL TITUS
292-2621 (FAX 297-1696)
PROJ.#948

REVIEWED BY: DLP

REVIEW DATE: 10/22/91

HYDROCARBON IDENTIFICATION (HCID)
BY OREGON DEQ TPH-HCID

SAMPLE ID:	948-9-14-11
OAL ID: 25-I366-	01458
SAMPLE DATE:	10/14/91
MATRIX:	SOIL
EXTRACTION DATE:	10/16/91
ANALYSIS DATE:	10/16/91
HCID:	OIL
SURR.RECOVERY %	89.
ANALYST:	RJ

ORTHOTERPHENYL WAS USED AS THE SURROGATE
NA = NOT ANALYZED
ND = NONE DETECTED (GASOLINE < 20 MG/KG, DIESEL < 50 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY
<LLD(G,D,OIL)=LESS THAN THE LOWER LIMIT OF DETECTION

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14855 SW Old Scholls Ferry Road
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7412 SW BEAVERTON-HILLSDALE
SUITE 102
PORTLAND, OR. 97225
BILL TITUS
292-2621 (FAX 297-1696)
PROJ.#948

REVIEWED BY: DP

REVIEW DATE: 10/22/91

TOTAL PETROLEUM HYDROCARBON (TPH)
BY EPA 418.1 MODIFIED

SAMPLE ID:	948-9-14-11
OAL ID: 25-I366-	01458
SAMPLE DATE:	10/14/91
EXTRACTION DATE:	10/21/91
ANALYSIS DATE:	10/22/91
TPH MG/KG	460.
ANALYST:	PC

NA = NOT ANALYZED
ND = NONE DETECTED (<3 MG/KG)

OAL

A DIVISION OF PGE

OREGON ANALYTICAL LABORATORY
14855 SW Old Scholls Ferry Road
Beaverton, OR 97007
(503) 644-5300
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7412 SW BEAVERTON-HILLSDALE
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PORTLAND, OR. 97225
BILL TITUS
292-2621 (FAX 297-1696)
PROJ.#948

REVIEWED BY: RJP
REVIEW DATE: 10/22/91

BTEX
BY EPA 602/8020

SAMPLE ID:		948-9-14-11
OAL ID: 25-I366-		01458
SAMPLE DATE:		10/14/91
MATRIX:		SOIL
EXTRACTION DATE:		10/15/91
ANALYSIS DATE:		10/16/91
BENZENE	PPB	ND
TOLUENE	PPB	ND
ETHYLBENZENE	PPB	ND
XYLENES	PPB	ND
SURR.RECOVERY	%	64.
ANALYST:		RJ

BROMOFLUOROBENZENE WAS USED AS THE SURROGATE
WATER MATRIX UNITS ARE UG/L
SOLIDS MATRIX UNITS ARE UG/KG
NA = NOT ANALYZED
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY
ND = NONE DETECTED

DETECTION LIMITS:	WATER	SOLIDS
BENZENE	<0.5	<2.0
TOLUENE	<0.5	<2.0
ETHYLBENZENE	<0.5	<2.0
XYLENES	<1.0	<2.0

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PORTLAND, OR. 97225
BILL TITUS
292-2621 (FAX 297-1696)
PROJ.#948

REVIEWED BY: DLP

REVIEW DATE: 10/22/91

PCB ANALYSIS OF SOLIDS
BY EPA METHODS 3540 AND 8080

SAMPLE ID:		948-9-14-11
OAL ID: 25-I366-		01458
SAMPLE DATE:		10/14/91
PCB	MG/KG	0.32(1260)

ND = NONE DETECTED(<0.05 MG/KG)
NA = NOT ANALYZED

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OREGON ANALYTICAL LABORATORY
14855 SW Old Scholls Ferry Road
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SUITE 102
PORTLAND, OR. 97225
BILL TITUS
292-2621 (FAX 297-1696)
PROJ.#948

REVIEWED BY: DHP

REVIEW DATE: 10/22/91

HYDROCARBON IDENTIFICATION (HCID) BY OREGON DEQ TPH-HCID

SAMPLE ID:	948-9-14-12
OAL ID: 25-I366-	01459
SAMPLE DATE:	10/14/91
MATRIX:	SOIL
EXTRACTION DATE:	10/16/91
ANALYSIS DATE:	10/16/91
HCID:	OIL
SURR.RECOVERY %	83.
ANALYST:	RJ

ORTHOTERPHENYL WAS USED AS THE SURROGATE
NA = NOT ANALYZED
ND = NONE DETECTED (GASOLINE < 20 MG/KG, DIESEL < 50 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY
<LLD(G,D,OIL)=LESS THAN THE LOWER LIMIT OF DETECTION

OAL

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Beaverton, OR 97007
(503) 644-5300
Fax: (503) 671-1404

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SUITE 102
PORTLAND, OR. 97225
BILL TITUS
292-2621 (FAX 297-1696)
PROJ.#948

REVIEWED BY: DLP

REVIEW DATE: 10/22/91

TOTAL PETROLEUM HYDROCARBON (TPH)
BY EPA 418.1 MODIFIED

SAMPLE ID:	948-9-14-12
OAL ID: 25-I366-	01459
SAMPLE DATE:	10/14/91
EXTRACTION DATE:	10/21/91
ANALYSIS DATE:	10/22/91
TPH MG/KG	770.
ANALYST:	PC

NA = NOT ANALYZED
ND = NONE DETECTED (<3 MG/KG)

Oregon Analytical Laboratory
14855 S.W. Old Scholls Ferry Rd.
Beaverton, Oregon 97007
(503) 644-5300
FAX (503) 671-1404

Chain of Custody Record
Laboratory Analysis Request

Page 1 of 1

Information

Company GRI | Project Name Pacific Detroit Diesel | Sampler's Name SLM

Contact Bill Titus | Project Number 948 | Signature Sharon Melmon

Phone # 292-2621 Fax 297-1696 | P.O. Number | Sampling Date 9-14-91

Provide Verbal Results ☒ Yes ☐ No | Comments | Received @ 4°C ☐ Yes ☐ No

Provide FAX Results ☒ Yes ☐ No | Appropriate Containers ☐ Yes ☐ No

Sample #	Sample Description	Date	Time	OAL #	Matrix: Soil	Matrix: Water	Matrix: Other	TPH-HCID OAR/DEQ	TPH-G OAR/DEQ	TPH-D OAR/DEQ	TPH 418.1 MOD OAR/DEQ	TPH 418.1	BTEX 602/8020	Volatiles 624/8240	Semivolatiles 625/8270	Halogenated Volatiles 601/8010	Chlorinated Pesticides 606/8080	PCB 608/8080	TCLP (8) Metals	RUSH	Remarks
48-9-14-11	Soil @ 13 ft	9-14-91	AM		X			X	X	X			X					X			TPH-d and/or TPH-g,
48-9-14-12	Soil @ 12.5 ft	9-14-91	AM		X			X	X	X											as appropriate

Relinquished	Date	Time
Sharon L. Melmon	9-14-91	11:00
GRI		

Received	Date	Time
D. Ward	10-14-91	11:00
OAL		

Relinquished	Signature	Date	Print Name	Time	Company

Received	Signature	Date	Print Name	Time	Company

Relinquished	Signature	Date	Print Name	Time	Company

Received	Signature	Date	Print Name	Time	Company

HAYMOND & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS

1128 S.W. 13TH, PORTLAND, OR 97205
(503) 223-2737 FAX: 223-6168

October 25, 1991

Geotechnical Resources, Inc.
7412 S.W. Beaverton-Hillsboro Hwy.
Suite 102
Portland, OR 97225

PROJECT NAME/SITE: PACIFIC DETROIT DIESEL

PROJECT #: 948

(LAB FILE: GRI9.DOC)

LAB ID/ FIELD ID:

2524/ 948-10-23-13 SOIL

TPH-418.1: Hydrocarbons not detected or present below detection limit

TPH-HCID Parameters:
1) If possible, identification is by comparison to reference chromatograms. If identification cannot be made by comparison, then compounds from C_6 to C_{10} are called "Gasoline"; from C_{11} to C_{28} are called "Diesel"; and C_{29} and beyond are called "Heavy Oil".
2) The reporting limit for Gasoline is 20 mg/kg.
3) The reporting limit for Diesel is 50 mg/kg.
4) The reporting limit for Heavy Oil is 50mg/kg.

BTEX (602/8020) Parameters for Water
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is 3ug/l (ppb).
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

BTEX (602/8020) Parameters for Soil
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is .1 mg/kg
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

TPH-G Parameters:
1) Duplicate analyses agree to within 10%.
2) The reporting limit is 10 mg/kg.
3) Laboratory blank showed no gasoline.

TPH-418.1 Parameters for Soil
1) The detection limit for TPH is 2 mg/kg.
2) The limit of quantitation is 6 mg/kg.
3) The laboratory blank showed no detected TPH.

TPH-418.1 Parameters for Water
1) The detection limit for TPH is .1 mg/l
2) The limit of quantitation is .3 mg/l
3) The laboratory blank showed no detected TPH.

TPH-D Parameters for Soil
1) Duplicate analyses agree to within 10%.
2) The reporting limit is 20 mg/kg.
3) The laboratory blank showed no diesel.

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ENVIRONMENTAL SCIENTISTS
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(503) 223-2737 FAX: 223-6168

CHAIN OF CUSTODY

OJECT # 948	PROJECT NAME: Pacific Detroit Diesel	P.O. #	TODAY'S DATE: 10-23-91
MPANY NAME: GRI		PHONE: 292-2621	
PORT ATTENTION: Sharon Melmon		FAX: 297-1696	
MPLES COLLECTED BY: SLM		DATE COLLECTED: 10-23-91	

FIELD I.D.	MEDIA	CONTAINER	PRESERVATIVE	ANALYSIS REQUIRED	
~~B~~-10-23-13	Soil	8 oz. jar	-	TPH 418.1	2524

RELINQUISHED BY: Sharon Melmon	DATE/TIME 10-23-91 3:30	RECEIVED BY:	DATE/TIME
RELINQUISHED BY:	DATE/TIME	RECEIVED BY LAB: Jeffrey B. Richard	DATE/TIME 23oct91 3:41 pm
REMARKS:		EXPRESS UPS MAIL CXL GREY TAXI CAB	

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ATTACHMENT B

MATERIAL SAFETY DATA SHEETS

MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

ZEP MANUFACTURING COMPANY
FIRST IN MAINTENANCE PRODUCTS

DATE : 06/15/88 ZEP FORMULA 940
SUPERSEDES: 05/02/87 PRODUCT NUMBER: 0472

SECTION I - E M E R G E N C Y C O N T A C T S

ZEP MANUFACTURING COMPANY
P.O. BOX 2015
ATLANTA, GEORGIA 30301
TELEPHONE (404)352-1680
BETWEEN 8:00A.M.-5:00P.M.
(EASTERN TIME ZONE)

NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404
435-2973, 996-0899, 252-1587, 351-2952, 445-9226
LOCAL POISON CONTROL CENTER .....
TRANSPORTATION EMERGENCY
CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED
DISTRICT OF COLUMBIA (202)483-7616 ALL CALLS RECORDED

SECTION II - H A Z A R D O U S I N G R E D I E N T S

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
** SODIUM METASILICATE ** SILICIC ACID (H2-SI-O3) DI-SODIUM SALT; WATER GLASS; CAS# 6834-92-0; RTECS# VV9275000; OSHA DUST LIMIT-2MG/M3 (FOR POWDERS ONLY).	N/D	COR	10-20
** NONYLPHENOXYPOLY(ETHYLENEOXY)ETHANOL ** POLY(OXY-1,2-ETHANEDIYL), ALPHA-(NONYLPHENYL)-OMEGA-HYDROXY; CAS# 9016-45-9; RTECS# MD0900000; OSHA PEL-N/D	N/D	EIR	< 5
** SODIUM LINEAR ALKYL NAPHTHALENE SULFONATE ** CAS# PROPRIETARY; RTECS# NONE	N/D	IRR	< 5
** SODIUM DODECYLBENZENE SULFONATE ** LINEAR ALKYL SODIUM SULFONATE; CAS# 25155-30-0; RTECS# DB4825000; OSHA PEL N/D	N/D	IRR	< 5

SPECIAL NOTE: ADVERSE HEALTH EFFECTS WOULD NOT BE EXPECTED UNDER RECOMMENDED CONDITIONS OF USE SO LONG AS PRESCRIBED SAFETY PRECAUTIONS ARE PRACTICED.

SECTION III - H E A L T H H A Z A R D D A T A

ACUTE EFFECTS OF OVEREXPOSURE:
CONCENTRATE MAY BE CORROSIVE TO EYES AND MUCUS MEMBRANES AND SOLUTIONS ARE SEVERE EYE IRRITANTS. EYE CONTACT MAY RESULT IN CORNEAL DAMAGE OR BLINDNESS.
SKIN CONTACT MAY PRODUCE IRRITATION DEPENDING ON LENGTH OF CONTACT TIME.
INHALATION MAY PRODUCE UPPER RESPIRATORY IRRITATION CHARACTERIZED BY SORE THROAT OR DIFFICULTY IN BREATHING.
INGREDIENTS IN THIS PRODUCT MAY AGGRAVATE EXISTING SKIN, EYE, OR RESPIRATORY DISORDERS.

SECTION III - H E A L T H H A Z A R D D A T A (CONTINUED)

CHRONIC EFFECTS OF OVEREXPOSURE:
REPEATED OR PROLONGED SKIN CONTACT MAY PRODUCE CHRONIC INFLAMMATION OR DERMATITIS, CHARACTERIZED BY REDNESS, SCALING, OR ITCHING. REPEATED EYE EXPOSURE MAY PRODUCE CHRONIC INFLAMMATION OF THE EYE OR CORNEAL DAMAGE.
NONE OF THE INGREDIENTS ARE LISTED AS CARCINOGENS BY IARC, NTP, OR OSHA.

EST'D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: N/A

HMIS CODES: HEALTH 3; FLAM. 0; REACT. 0; PERS. PROTECT. B ; CHRONIC HAZ. NO

FIRST AID PROCEDURES:
SKIN : IMMEDIATELY FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS.
EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.
INHALE: MOVE EXPOSED PERSON TO FRESH AIR. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION PROMPTLY.
INGEST: IF THIS PRODUCT IS SWALLOWED, DO NOT INDUCE VOMITING. IF VICTIM IS CONSCIOUS GIVE PLENTY OF WATER TO DRINK. GET MEDICAL ATTENTION AT ONCE.

SECTION IV - S P E C I A L P R O T E C T I O N I N F O R M A T I O N

PROTECTIVE CLOTHING : WEAR NEOPRENE, NITRILE, OR NATURAL RUBBER GLOVES OR GLOVES WITH PROVEN RESISTANCE TO THE INGREDIENTS LISTED.
EYE PROTECTION : WEAR SPLASH-PROOF SAFETY GOGGLES ESPECIALLY IF CONTACT LENSES ARE WORN.
RESPIRATORY PROTECTION: KEEP FACE AWAY FROM SPRAY MIST AND DO NOT BREATHE VAPORS.
VENTILATION : VENTILATION SHOULD BE EQUIVALENT TO OUTDOORS. USE EXHAUST FANS AND OPEN WINDOWS IN ENCLOSED SPACES.

SECTION V - P H Y S I C A L D A T A

BOILING POINT (F)	: APP.220F	SPECIFIC GRAVITY	: 1.16
VAPOR PRESSURE(MMHG)	: N/D	PERCENT VOLATILE BY VOLUME (%)	: 67
VAPOR DENSITY(AIR=1)	: N/D	EVAPORATION RATE(WATER =1)	: 1.0
SOLUBILITY IN WATER	: COMPLETE	PH(CONCENTRATE)	: 13.0-13.3
		PH(USE DILUTION OF 1:100	): 11.2-11.5

APPEARANCE AND ODOR : CLEAR, THIN, AMBER LIQUID WITH FAINT ODOR.

SECTION VI - F I R E A N D E X P L O S I O N D A T A

FLASH POINT(F) (METHOD USED): N/A ( )
FLAMMABLE LIMITS LEL N/A UEL N/A
EXTINGUISHING MEDIA : NOT COMBUSTIBLE.
SPECIAL FIRE FIGHTING: NONE
UNUSUAL FIRE HAZARDS : MAY DECOMPOSE TO FORM TOXIC/CORROSIVE GASES

MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

DATE : 06/15/88 ZEP FORMULA 940
SUPERSEDES: 05/08/87 PRODUCT NUMBER: 0472

SECTION VII - R E A C T I V I T Y D A T A

STABILITY : STABLE
INCOMPATIBILITY(AVOID) : STRONG OXIDIZING AGENTS
POLYMERIZATION : WILL NOT OCCUR
HAZARDOUS DECOMPOSITION: CARBON DIOXIDE, CARBON MONOXIDE AND TOXIC/CORROSIVE FUMES AS OXIDES OF PHOSPHOROUS.

SECTION VIII - S P I L L A N D D I S P O S A L P R O C E D U R E S

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
OBSERVE SAFETY PRECAUTIONS IN SECTIONS 4 & 9 DURING CLEAN-UP. ABSORB SPILL ON AN INERT ABSORBENT MATERIAL (EG ZEP-O-ZORB); PICK UP AND PLACE IN A CLEAN D.O.T. SPECIFICATION CONTAINER FOR DISPOSAL. WASH AREA THOROUGHLY WITH A DETERGENT SOLUTION AND THEN RINSE WELL WITH WATER.

WASTE DISPOSAL METHOD:
LIQUIDS CANNOT BE SENT TO LANDFILLS UNLESS SOLIDIFIED. UNUSABLE PRODUCT AND SOME COLLECTED, SPENT USE-DILUTIONS MAY REQUIRE DISPOSAL AS A HAZARDOUS WASTE AT A PERMITTED TREATMENT/STORAGE/DISPOSAL FACILITY. IN MOST STATES HAZARDOUS WASTES IN TOTAL AMOUNTS OF 220 LBS. OR LESS PER MONTH MAY BE DISPOSED OF IN A CHEMICAL OR INDUSTRIAL WASTE LANDFILL. IF COMPANY EFFLUENT IS ULTIMATELY TREATED BY A [redacted]ICLY OWNED TREATMENT WORKS, NEUTRALIZATION OF SPENT TANK-SOLUTIONS WITH SUBSEQUENT DISCHARGE TO THE SEWER MAY BE POSSIBLE. CONSULT LOCAL, STATE AND FEDERAL AGENCIES FOR PROPER DISPOSAL METHOD IN YOUR AREA.

RCRA HAZ. WASTE NOS.: D002 (SEE ABOVE)

SECTION IX - S P E C I A L P R E C A U T I O N S

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:
STORE TIGHTLY CLOSED CONTAINER IN A DRY AREA AT TEMPS. BETWEEN 40-120 DEGREES F.
STORE AWAY FROM STRONG ACIDS AND OXIDIZING COMPOUNDS.
KEEP PRODUCT AWAY FROM SKIN AND EYES.
DO NOT BREATHE SPRAY MISTS OR VAPORS.
KEEP AWAY FROM FOOD AND FOOD PRODUCTS.
CLOTHING OR SHOES WHICH BECOME CONTAMINATED WITH SUBSTANCE SHOULD BE REMOVED PROMPTLY AND NOT REWORN UNTIL THOROUGHLY CLEANED.
KEEP OUT OF THE REACH OF CHILDREN

SECTION X - T R A N S P O R T A T I O N D A T A

DOT PROPER SHIPPING NAME
[redacted]NE
[redacted] HAZARD CLASS: N/A
DOT I.D. NUMBER : N/A DOT LABEL/PLACARD: NONE
[redacted]A TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED
EPA CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER):
SODIUM DODECYLBENZENE SULFONATE-1000#

MATERIAL SAFETY DATA SHEET

SAFETY-KLEEN CORP.
777 Big Timber Rd.
Elgin, IL **60123**

safety-kleen corp.

IDENTITY *(As Used on Label and List)* Immersion Cleaner and Carburetor and Cold Parts Cleaner 609	*Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.*
Section I Part #6631, 50, 51	
Manufacturer's Name Safety-Kleen Corp.	Emergency Telephone Number 312/697-8460
Address *(Number, Street, City, State, and ZIP Code)* 777 Big Timber Road	Telephone Number for Information 312/697-8460
Elgin, Illinois 60123	Date Prepared September 12, 1986, Revised March 11, 1987,
	Signature of Preparer *(optional)* Revised September 29, 1987

Section II—Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% *(optional)*
Cresylic Acids CAS NO. 1319-77-3	5 ppm	5 ppm (skin)		11.9
Petroleum Sulfonate proprietary blend	Unknown	Unknown		7.4
Methylene Chloride 75-09-2	500 ppm	100 ppm	-	31.7
Ortho-di-chlorobenzene 95-50-1	50 ppm	50 ppm	-	31.3
Complex Amines proprietary blend	Unknown	Unknown	-	0.4
Triethanolamine 102-71-6	-	-	-	0.4
Water 7732-18-5	-	-	-	16.8

Section III—Physical/Chemical Characteristics

Boiling Point	102-395°F	Specific Gravity (H_2O = 1)	1.19
Vapor Pressure (mm Hg.)	water	Melting Point	N/A
Vapor Density (AIR = 1)	water	Evaporation Rate (water = 1)	water

Solubility in Water
Completely miscible in all proportions.

Appearance and Odor
Clear, dark amber liquid-aromatic odor. Two distinct layers comprise the product.

Section IV—Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
Non-flammable.	N/A	-	-

Extinguishing Media
N/A

Special Fire Fighting Procedures
Although product is non-flammable, flames, welding arcs or other high temperature sources can cause decomposition. This decomposition can yield corrosive and toxic fumes.

Unusual Fire and Explosion Hazards
--

PART NO. 6631

Section V—Reactivity Data

Stability	Unstable		Conditions to Avoid: Avoid smoke from any combustion product.
	Stable	X	

Incompatability *(Materials to Avoid)*: Strong oxidizing agents.

Hazardous Decomposition or Byproducts: Normally none; however, flames and welding arcs can produce corrosive and toxic fumes.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI—Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Yes	Yes	Yes

Health Hazards *(Acute and Chronic)*: This material is corrosive to living tissue. Excessive inhalation can cause headache, dizziness and nausea. Harmful or fatal if swallowed.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	No	Yes (Group 3) (Methylene Chloride)	No

Methylene chloride has been found to cause tumors in laboratory test animals.

Signs and Symptoms of Exposure: Burning of eyes and skin, headache, nausea.

Medical Conditions Generally Aggravated by Exposure: Unknown.

Emergency and First Aid Procedures: Eyes - Irrigate with water. Skin - Wash with soap and water and/or baking soda water. Inhalation - Remove to fresh air source. If ingested, administer plain water. DO NOT INDUCE VOMITING. Call a physician.

Section VII—Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled: Absorb spill with sawdust or oil absorbent or soda ash. Catch and collect for recovery as soon as possible. Further flushing and cleaning with a weak alkaline solution (soda ash, baking soda, caustic soda) will aid in neutralizing cresylic acid from the spill.

Waste Disposal Method: Dispose of in accordance with company, local, state and federal regulations.

Precautions to Be Taken in Handling and Storing: Keep away from heat, sparks and open flame. Use adequate ventilation. Avoid contact with skin and eyes.

Other Precautions: If cleaner contacts clothing, change clothes or wash off excess immediately to avoid possible skin irritation. Although product is non-flammable, open flames, welding arcs or other high temperature sources can cause product decomposition. This decomposition can yield corrosive and toxic fumes.

Section VIII—Control Measures

Respiratory Protection *(Specify Type)*: Self-contained breathing apparatus for concentrations above TLV limits. NIOSH approved.

Ventilation		
	Local Exhaust: Yes.	Special: None.
	Mechanical *(General)*: None.	Other: None.

Protective Gloves	Eye Protection
Rubber gloves.	Chemical face shield; goggles.

Other Protective Clothing or Equipment: Rubber apron to protect skin and clothing.

Work/Hygeienic Practices: Do not smoke around this product.

SAFETY-KLEEN 105 PARTS WASHING SOLVENT

MATERIAL SAFETY DATA SHEET

SECTION I -- PRODUCT INFORMATION

Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123
For Product/Sales Information Call 708/697-8460

EMERGENCY TELEPHONE	*MEDICAL:*	*TRANSPORTATION:*
These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC

IDENTITY (TRADE NAME): SAFETY-KLEEN 105 PARTS WASHING SOLVENT

SYNONYMS: PETROLEUM DISTILLATES, PETROLEUM NAPHTHA, MINERAL SPIRITS, STODDARD SOLVENT

SK PART NUMBER: 6617

FAMILY/CHEMICAL NAME: HYDROCARBON SOLVENT

PRODUCT USAGE: SOLVENT FOR CLEANING AND DEGREASING PARTS

SECTION II -- HAZARDOUS COMPONENTS

NAME	SYNONYM	%	CAS NO.	OSHA PEL (ppm)	ACGIH TLV (ppm)
Parts Washer Solvent (consists predominantly of C9-C13 hydrocarbon)	Mineral Spirits	(Typical % by Wt.)			
C9-C13 Saturated Hydrocarbon		85	64741-41-9	100 (Stoddard Solvent)	100 (Stoddard Solvent)
*Toluene		0.5	108-88-3	100 150 STEL	100 150 STEL
*Xylene		1.0	1330-20-7	100 150 STEL	100 150 STEL
*Ethyl Benzene		0.5	100-41-4	100 Skin 125 STEL	100 125 STEL
C8+ Aromatics		12.0	Mixture	N/E	N/E
Chlorinated Solvents		(Max 1% by Wt.)			
*1,1,1 Trichloroethane		< 0.5	71-55-6	350 450 STEL	350 450 STEL
*Tetrachloroethylene		< 0.5	127-18-4	25	50 200 STEL

N/E = Not Established
* See Section X - Other Regulatory Information

SECTION III -- PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR: Combustible liquid - clear, green, with characteristic hydrocarbon odor.

BOILING POINT: 300° - 429° F

Eyes: Contact may cause slight to moderate irritation. High vapor concentrations (> 500 ppm) are irritating to the eyes.

Inhalation: High concentrations of vapor or mist may be irritating to the respiratory tract, cause headaches, dizziness, nausea, impaired coordination, anesthesia and may have other central nervous system effects.

Ingestion: Low order of acute oral toxicity. May cause irritation of the throat, nausea, vomiting and symptoms of central nervous system depression. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC: Prolonged and/or repeated contact may cause drying and cracking of the skin or dermatitis.

OTHER POTENTIAL HEALTH HAZARDS:

The impurities that may be present are not expected to add significantly to the effects of exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing central nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: Tetrachloroethylene is listed by IARC and NTP as a suspected carcinogen. Studies indicate that Ethyl Benzene and 1,1,1 Trichloroethane are experimental teratogens.

SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

EYES: For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. Consult physician if irritation or pain persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure into fresh air.

SKIN: Remove contaminated clothing. Wash skin twice with soap and water. If irritation develops and persists, consult a physician.

INGESTION: If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

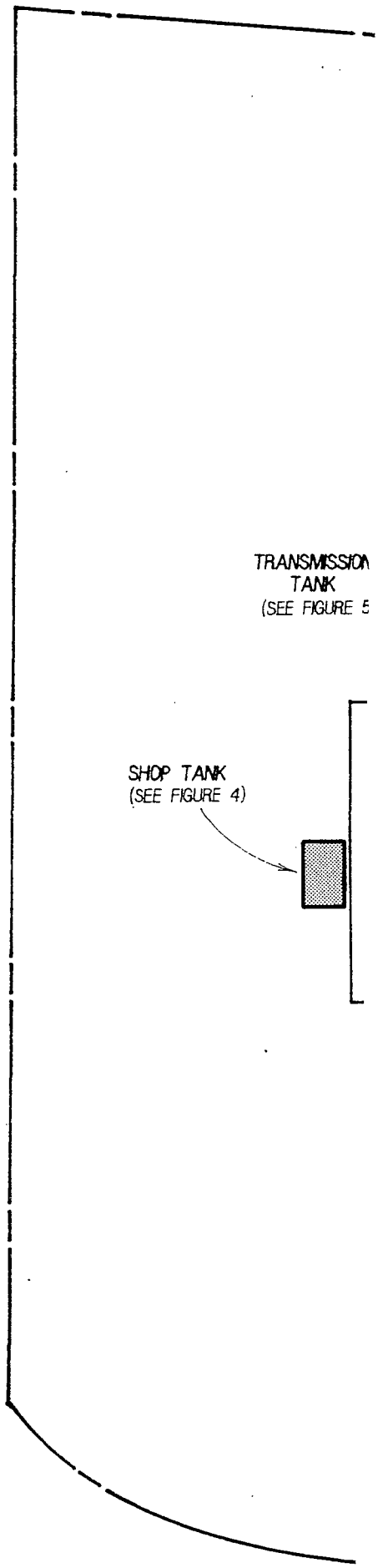
SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

SPILL PROCEDURES: Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb onto sand or other absorbent material. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.

WASTE DISPOSAL METHODS: Dispose in accordance with Federal, State, and local regulations. Contact Safety-Kleen regarding recycling.

HANDLING PRECAUTIONS: Avoid contact with eyes, skin or clothing. Use in well ventilated area and avoid breathing vapors or mists. Keep away from heat, sparks and open flames.

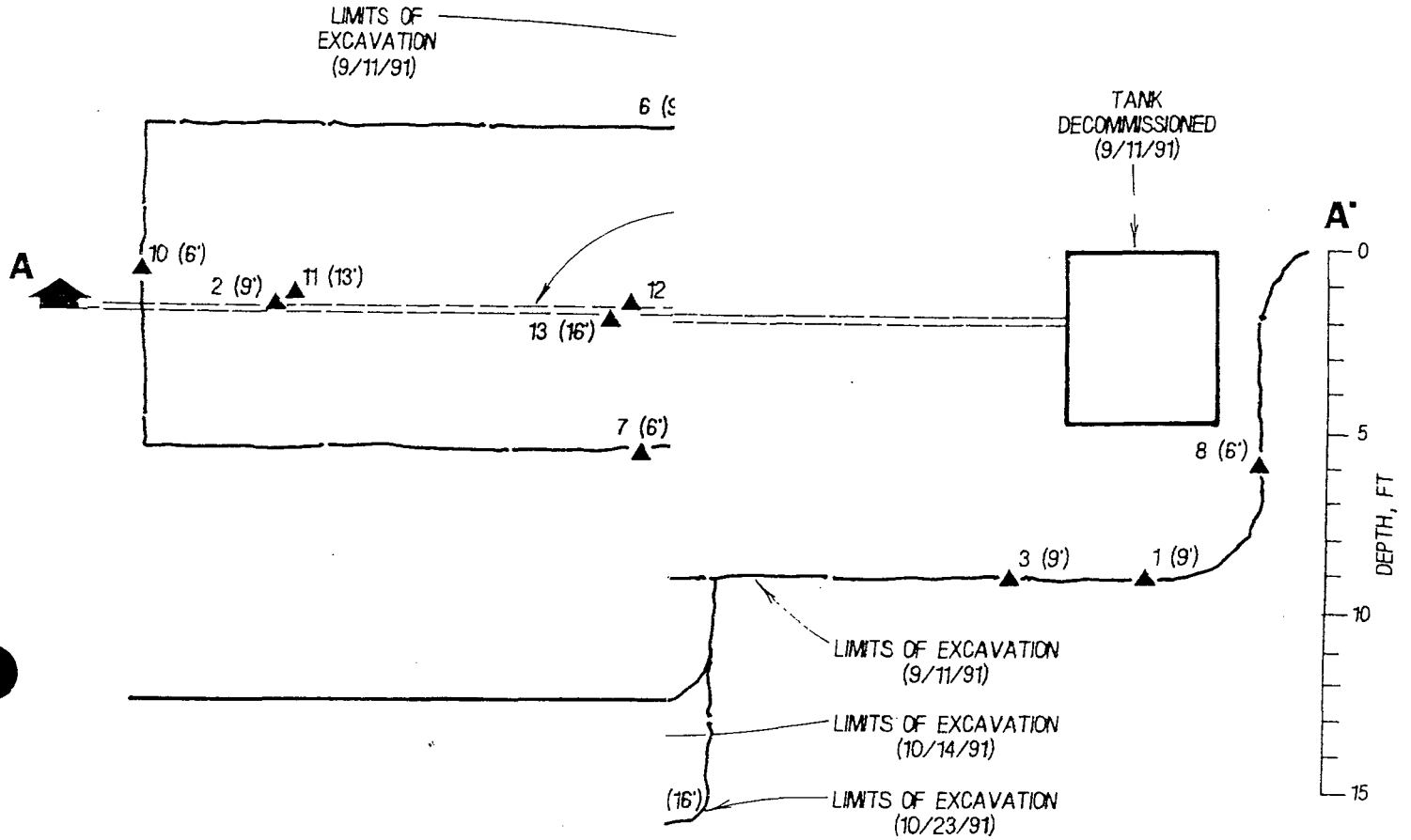
SHIPPING AND STORING PRECAUTIONS: Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport.



PACIFIC DETROIT DIESEL-ALLISON
UST DECOMMISSION / SOIL REMEDIATION

SITE PLAN

DEC. 1991 JOB NO. 892 FIG. 2



PACIFIC DETROIT DIESEL-ALLISON
UST DECOMMISSION / SOIL REMEDIATION

TRANSMISSION TANK DETAIL

DEC. 1991 JOB NO. 892 FIG. 5

Geotechnical Resources Incorporated

Consulting Engineers & Geologists

April 24, 1992

J/ADDBASIN.892

Department of Environmental Quality
Northwest Region Office
1500 SW First Avenue, Suite 750
Portland, Oregon 97201-5884

Attention: Laurie McCulloch

SUBJECT: UNDERGROUND STORAGE TANK DECOMMISSIONING, PACIFIC DETROIT DIESEL FACILITIES, 5940 N. BASIN AVENUE, PORTLAND, OREGON, DEQ FACILITY ID NO. 8346

In response to your request for information regarding the disposal of the three underground storage tanks decommissioned at the Detroit Diesel facilities at 5940 N. Basin Avenue, the tanks were disposed of as follows:

1) **Office Building Tank.** This tank, a 1,000-gallon bitumen-coated steel tank used for the storage of diesel fuel, was decommissioned by removal on June 26, 1991. The tank was cleaned, rendered inert, cut open, and transported to the Schnitzer Steel Products Company, International Terminal at 12005 N. Burgard Street, Portland, Oregon, on June 26, 1991.

2) **Shop Tank.** This tank, a 500-gallon bitumen-coated steel tank used for the storage of diesel fuel, was decommissioned by removal on June 26, 1991. The tank was cleaned, rendered inert, and ownership was transferred to Terry Cannon, a Detroit Diesel employee. Mr. Cannon has installed the tank as an above-ground fuel oil tank for his home at 9165 SE Hillview Drive Amity, Oregon.

3) **Transmission Tank.** This tank, a 650-gallon steel tank used as a holding tank and separator for waste oil, was decommissioned by removal on September 11, 1991. The tank was pumped, cleaned, rendered inert, and transported to the Schnitzer Steel Products Company, International Terminal at 12005 N. Burgard Street, Portland, Oregon, on October 28, 1991.

A copy of the City of Portland Fire Marshal's decommissioning permit and bills of sale for the "office building tank" and the "transmission tank" are attached, along with an underground storage tank disposal certificate executed by Oregon Pacific Tank Services, the firm which decommissioned and transported the tanks. No bill of sale for the "shop tank" was ever prepared. If you wish to obtain more information regarding the reuse of this tank, Mr. Cannon may be contacted at Detroit Diesel.

7412 SW Beaverton-Hillsdale Hwy
Suite 102
Portland, Oregon 97225
Phone (503) 292-2621

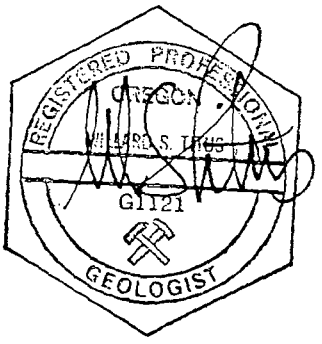
As you know, approximately 300 cubic yards of contaminated soil was excavated during the decommissioning of the "office building tank." This material was successfully aerated on-site and on January 17, 1992, your office approved our proposal for off-site transfer of the aerated soil. The soil was transported to Mr. Mann's property in Forest Grove on January 23, 1992, in accordance with the provisions of your approval letter. A vicinity map and site plan of the final disposal site for this material supplied to us by Oregon Pacific Tank Services, the firm which hauled and placed the material, are enclosed.

On January 23, 1992, the contaminated soil excavated from the vicinity of the "transmission tank" (approximately 120 cubic yards) was transported to and disposed of at the Hillsboro Landfill under a disposal permit (Number 777, dated October 25, 1991) issued by the Hillsboro Landfill. Dump tickets for the contaminated soil are attached.

If you have any further questions regarding this project, please do not hesitate to contact our office at any time.

Sincerely,

GEOTECHNICAL RESOURCES, INC.



David D. Driscoll, P.E.
Principal

Willard S. Titus, P.G.
Project Geologist

Enclosed:
- Fire Marshal's Decommissioning Permit
- Bills of Sale (2)
- Certificate of Underground Storage Tank Disposal
- Vicinity Map & Site Plan, Mann Property
- Dump Tickets

cc: Marvin Pierce / Pacific Detroit Diesel

City of Portland
FIRE PREVENTION DIVISION
55 S.W. Ash Street
Portland, OR 97204 Phone: 248-0203

PERMIT NUMBER 910766
FEE AMOUNT 46.95
CODE 19d(2)

Subject to the compliance with the ordinances of the City of Portland, permission is hereby granted for the installation of:

____ NEW INSTALLATION ____ ADDITION ____ ALTERATION ____ REPAIR X REMOVE

X LIQUIDS/TANKS ____ L.P.G. ____ COMPRESSED GASES ____ DRY CLEANING PLANTS ____ PAINT SPRAY BOOTHS

Located at 5940 N. Basin – Oregon Trucking Assoc./Pac. Detroit Diesel-Allison

Contractor Oregon Pacific Tank Services, Inc.

Permit Issued 6-7 19 91 Fire Marshal

By M. Bell

INSPECTION RECORD:	DATE	INSPECTOR	OTHER
APPROVE TANK/CYLINDER LOCATION			
APPROVE PIPING AND VALVES			
PRESSURE TEST WITNESSED	6-11-91		
[illegible] COVER			

FINAL APPROVAL
6-26-91
DATE INSPECTOR

NOTE: Keep card conspicuously posted on premises until job is completed and final inspection made.
Request for final must be made within 14 days after completion of work. Permit valid for 180 days only

Date 6-7 19 91 Cash ____ Check 1144 T 1068

Received of Oregon Pacific Tank Services, Inc.

The sum of Forty Six & 95/100 $ 46.95

300.151 Rev. 4-89 By M. Snider

ME: Pe. Pacific Tank
ESS

SCHNITZER STEEL PRODUCTS CO.
INTERNATIONAL TERMINAL
12005 N. BURGARD, PORTLAND, OR 97203
(503) 286-5771

BILL OF SALE NO.
FE-655829

CONTRACT NUMBER

I REPRESENT AND WARRANT THAT THIS MATERIAL DOES NOT CONTAIN A HAZARDOUS SUBSTANCE AS DEFINED BY FEDERAL OR STATE LAW, AND I AGREE TO INDEMNIFY SCHNITZER STEEL PROD. CO. AGAINST ALL CLAIMS

DOR BER | COMMODITY NUMBER 103 | COMMODITY DESCRIPTION

11960 6 lb 02:36 PM 06/26/91 — G

10980 6 lb 02:48 PM 06/26/91 — T

980 — N

DRY

WET/SNOW

BILL OF SALE

reb... state that I am the lawful owner of the material described ... I have a right to sell same and that for payment re... hereby acknowledged, I sell and convey title of same ...ER STEEL PRODUCTS CO.

Richard [signature]

PRICE	EXTENDED	WEIGHER
50	24.50	
CARRIER	TRACTOR NO.	TIME
Power Parts		

CUSTOMER

S1009

TOMER
ne. Pac. Tank
RESS
Service

SCHNITZER STEEL PRODUCTS CO.
INTERNATIONAL TERMINAL
12005 N. BURGARD, PORTLAND, OR 97203
(503) 286-5771

BILL OF SALE NO.
FE-676089

CONTRACT NUMBER

I REPRESENT AND WARRANT THAT THIS MATERIAL DOES NOT CONTAIN A HAZARDOUS SUBSTANCE AS DEFINED BY FEDERAL OR STATE LAW, AND I AGREE TO INDEMNIFY SCHNITZER STEEL PROD. CO. AGAINST ALL CLAIMS.

NDOR MBER

COMMODITY NUMBER 103

COMMODITY DESCRIPTION

N 7440 G lb 10:31 AM 10/28/91 ◀ G

Job 1013 TM

T A 6100 G lb 10:52 AM 10/28/91 ◀ T

N 1340 ◀ N

DRY

WET/SNOW

WEIGHER

BILL OF SALE

I hereby state that I am the lawful owner of the material described hereon, that I have a right to sell same and that for payment received in full, hereby acknowledged, I sell and convey title of same to SCHNITZER STEEL PRODUCTS CO.

X Frank Nuted

PRICE 50 —

EXTENDED 33 50

CARRIER

TRACTOR NO.

TIME

S1009

CUSTOMER

Oregon Pacific Tank Services, Inc.

UNDERGROUND TANK DISPOSAL CERTIFICATION

TO: _____

I/We hereby certify as Job-site Foreman or Superintendent, and as Corporate Officer or General Manager of Oregon Pacific Tank Services, Inc., that we have properly demolished the underground storage tanks as described below in a safe and proper manner and in compliance with all applicable Government Regulations and confirm that such tanks were rendered unfit for further use.

Our Job Number 1007

Number of Tanks 2

Approximate Sizes	Type of Construction
1,000 gal diesel	steel
(1) sump	steel

Location Removed From:

Pacific Detroit Diesel - Allison
5940 N. Basin Ave.
Portland, Oregon

Cleaned By: Pacific Coast Environmental, Inc

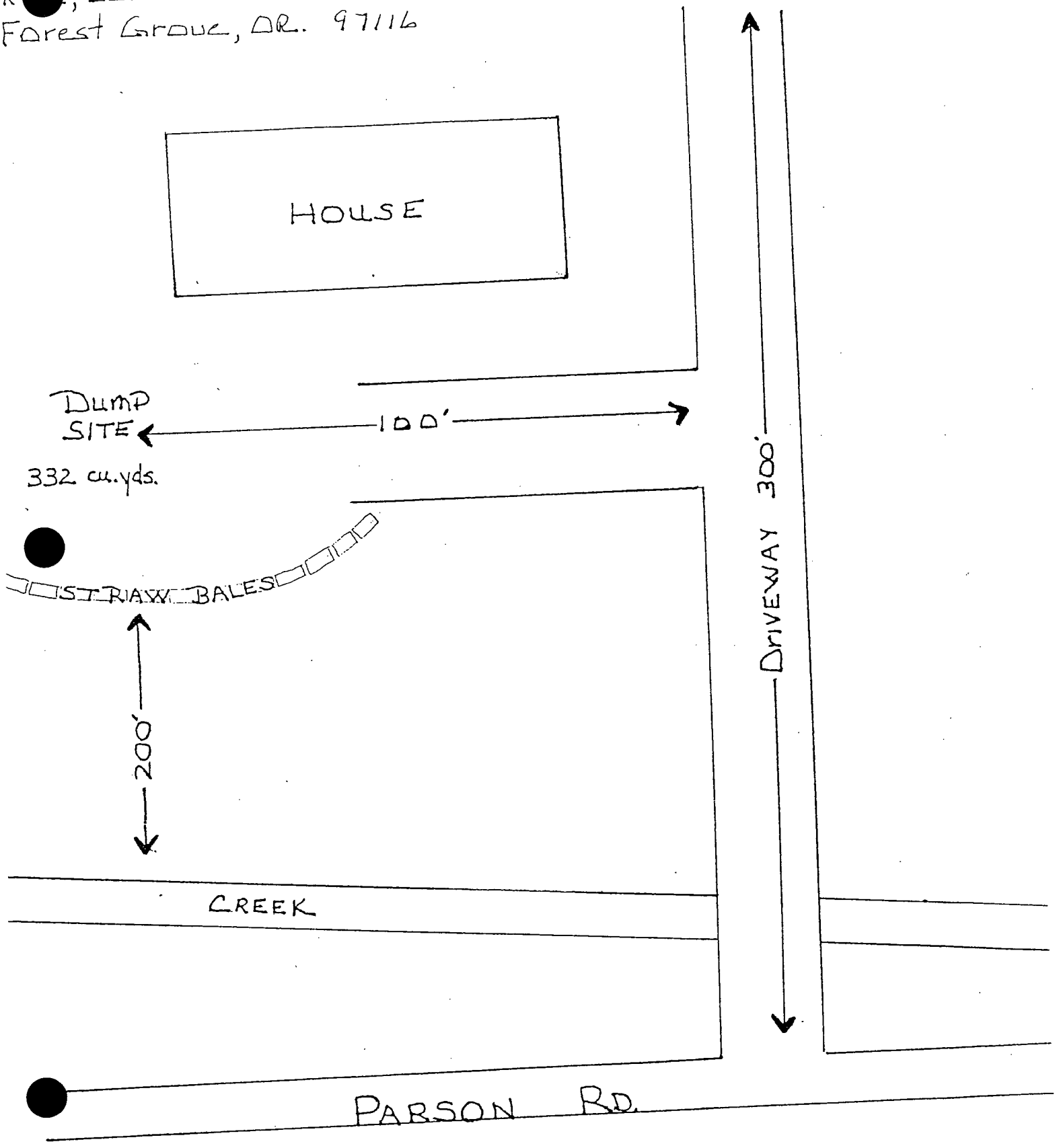
Transported By: Oregon Pacific Tank Services, Inc.

Transported To: Schnitzer Steel, Portland OR.

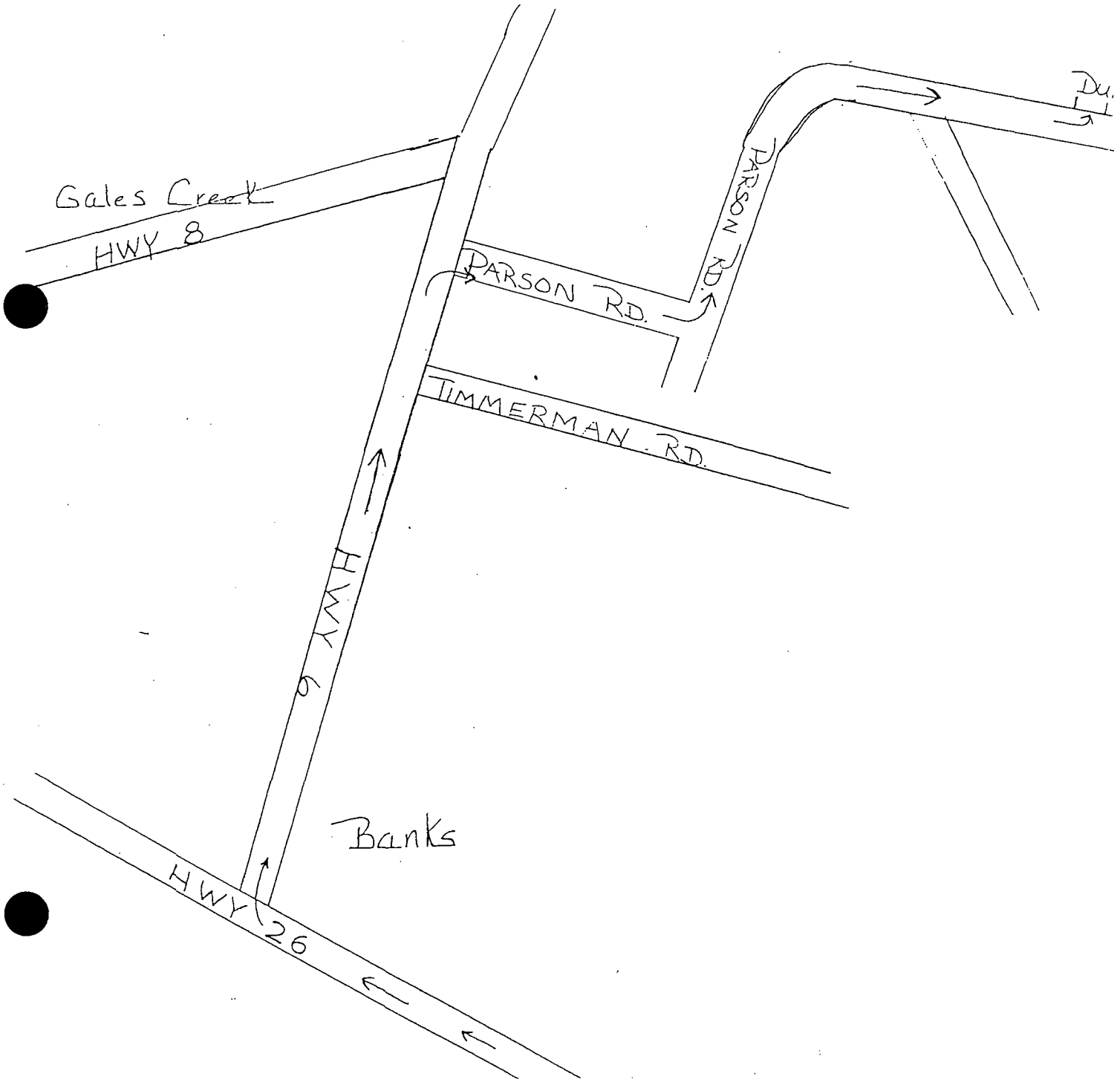
Patti A. Nichols
Foreman or Supervisor

Patti A. Nichols
Corporate Officer

Ken Mann
R[redacted], Box 329-A
Forest Grove, OR. 97116



NY 26 TO HWY 6
G[redacted] ON PARSON RD. APPROX 1.5 MILES
DDRESS: RT. 2. BOX 329-A
KEN MANN



P.01
9297696
TO
04-24-1992 02:10PM FROM

Hillsboro Landfill Inc.

Scale House - LAN # 2

Account PAC DETROIT PAC012
Fleet # Tag #
Loop Tag 92
Transaction # 619414 Site P2
Transtn Type = DISPOSAL - 3rd Party
Payment Type = Charge
Vehicle Type = Not Specified
Origin Type = METRO Area
Materl. Type = LF-Soils P#
Destin. Type = Hillsboro LF

Permit# 777

	In	Out	
Date	01-23-92	01-23-92	B2 IN
Time	14:26	14:33	7
Scale Op	CLC	DEE	
	lbs	tons	
Gross Wt	49,680	24.840	S12
Tare Wt	21,700	10.850	S13
Net Wt	27,980	13.990	TN

Rate $ 53.35/TN

Tip Fee	$	746.37	
Spec Fee	$	0.00	
Sales Tax	$	0.00	x 0.000
Total Fee	$	746.37	

AUTHORIZED SIGNATURE

Hillsboro Landfill Inc.

Scale House - LAN # 2

Account PAC DETROIT PAC012
Fleet # Tag #
Loop Tag 93
Transaction # 619415 Site P2
Transtn Type = DISPOSAL - 3rd Party
Payment Type = Charge
Vehicle Type = Not Specified
Origin Type = METRO Area
Materl. Type = LF-Soils P#
Destin. Type = Hillsboro LF

Permit# 777

	In	Out	B2
Date	01-23-92	01-23-92	IN
Time	14:30	14:36	6
Scale Op	CLC	DEE	
	lbs	tons	
Gross Wt	50,900	25.450	S12
Tare Wt	21,760	10.880	S13
Net Wt	29,140	14.570	TN

Rate $ 53.35/TN
Tip Fee $ 777.31
Spec Fee $ 0.00
Sales Tax $ 0.00 x 0.000
Total Fee $ 777.31

AUTHORIZED SIGNATURE

Hillsboro Landfill Inc.

Scale House - LAN # 2

Account PAC DETROIT PAC012
Fleet # Tag #
Loop Tag 79
Transaction # 619419 Site P2
Transtn Type = DISPOSAL - 3rd Party
Payment Type = Charge
Vehicle Type = Not Specified
Origin Type = METRO Area
Materl. Type = LF-Soils P#
Destin. Type = Hillsboro LF

Permit# 777

	In	Out	B2
Date	01-23-92	01-23-92	IN
Time	14:41	14:47	6
Scale Op	CLC	DEE	
	lbs	tons	
Gross Wt	49,320	24.660	S12
Tare Wt	22,760	11.380	S13
Net Wt	26,560	13.280	TN

Rate $ 53.35/TN
Tip Fee $ 708.49
Spec Fee $ 0.00
Sales Tax $ 0.00 x 0.000
Total Fee $ 708.49

Randy Kruger
AUTHORIZED SIGNATURE

Hillsboro Landfill Inc.

Scale House - LAN # 2

Account PAC DETROIT PAC012
Fleet # Tag #
Loop Tag 88
Transaction # 619413 Site P2
Transtn Type = DISPOSAL - 3rd Party
Payment Type = Charge
Vehicle Type = Not Specified
Origin Type = METRO Area
Materl. Type = LF-Soils P#
Destin. Type = Hillsboro LF

Permit# 777

	---In---	---Out---	B2
Date	01-23-92	01-23-92	IN
Time	14:19	14:27	8
Scale Op	CLC	DEE	
	lbs	tons	
Gross Wt	50,520	25.260	S12
Tare Wt	21,540	10.770	S13
Net Wt	28,980	14.490	TN

Rate $ 53.35/TN
Tip Fee $ 773.04
Spec Fee $ 0.00
Sales Tax $ 0.00 x 0.000
Total Fee $ 773.04

AUTHORIZED SIGNATURE

Hillsboro Landfill Inc.

Scale House - LAN # 2

Account PAC DETROIT PAC012
Fleet # Tag #
Loop Tag 92
Transaction # 619401 Site P2
Transtn Type = DISPOSAL - 3rd Party
Payment Type = Charge
Vehicle Type = Not Specified
Origin Type = METRO Area
Materl. Type = LF-Soils P#
Destin. Type = Hillsboro LF

Permit# 777

	---In---	---Out---	B2
Date	01-23-92	01-23-92	IN
Time	13:42	14:03	21
Scale Op	CLC	DEE	
	lbs	tons	
Gross Wt	97,700	48.850	S12
Tare Wt	33,520	16.760	S13
Net Wt	64,180	32.090	TN

Rate $ 53.35/TN
Tip Fee $ 1,712.00
Spec Fee $ 0.00
Sales Tax $ 0.00 x 0.000
Total Fee $ 1,712.00

AUTHORIZED SIGNATURE

Hillsboro Landfill Inc.

Scale House - LAN # 2

Account PAC DETROIT PAC012
Fleet # Tag #
Loop Tag 93
Transaction # 619408 Site P2
Transtn Type = DISPOSAL - 3rd Party
Payment Type = Charge
Vehicle Type = Not Specified
Origin Type = METRO Area
Materl. Type = LF-Soils P#
Destin. Type = Hillsboro LF

Permit# 777

	In	Out	B2
Date	01-23-92	01-23-92	IN
Time	13:54	14:13	19
Scale Op	CLC	DEE	
	lbs	tons	
Gross Wt	101,220	50.610	S12
Tare Wt	33,340	16.670	S13
Net Wt	67,880	33.940	TN

Rate $ 53.35/TN
Tip Fee $ 1,810.70
Spec Fee $ 0.00
Sales Tax $ 0.00 x 0.000
Total Fee $ 1,810.70

AUTHORIZED SIGNATURE

Hillsboro Landfill Inc.

Scale House - LAN # 2

Account PAC DETROIT PAC012
Fleet # Tag #
Loop Tag 89
Transaction # 619443 Site P2
Transtn Type = DISPOSAL - 3rd Party
Payment Type = Charge
Vehicle Type = Not Specified
Origin Type = METRO Area
Materl. Type = LF-Soils P#
Destin. Type = Hillsboro LF

Permit# 777

	In	Out	B2
Date	01-23-92	01-23-92	IN
Time	15:47	16:01	14
Scale Op	CLC	DEE	
	lbs	tons	
Gross Wt	88,260	44.130	S12
Tare Wt	33,420	16.710	S13
Net Wt	54,840	27.420	TN

Rate $ 53.35/TN
Tip Fee $ 1,462.86
Spec Fee $ 0.00
Sales Tax $ 0.00 x 0.000
Total Fee $ 1,462.86

AUTHORIZED SIGNATURE

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

NORTHWEST REGION

May 28, 1992

MARVIN PIERCE
PACIFIC DETROIT DIESEL-ALLISON
5061 N LAGOON AVENUE
PORTLAND OREGON 97217-7694

Re: Pacific Detroit Diesel
Allison-Basin #2
File No. 34-91-241

Dear Mr. Pierce:

The Department of Environmental Quality has completed our review of the information submitted to-date regarding the underground storage tank (UST) decommissioning and cleanup conducted at Pacific Detroit Diesel facilities at 5940 N. Basin Avenue, Portland, Oregon. The Department has determined that the site appears to be cleaned up in accordance with OAR 340-122-201 through -360, and that no further action is required at this time.

This determination is a result of our evaluation and judgement based on the regulations and facts as we now understand them, including:

1. Three USTs were removed and recycled. The 1000 gallon diesel tank and the 650 gallon waste oil tank were disposed at Schnitzer Steel Products. The 500 gallon diesel tank ownership was transferred to Terry Cannon, 9165 SE Hillview Drive, Amity, Oregon, to be used as an above ground fuel oil tank for his residence.

2. Approximately 300 cubic yards of petroleum-impacted soils were removed from the "office building tank" excavation and aerated onsite. After aeration was complete, three confirmatory samples were collected and analyzed for TPH (EPA 418.1 M). The results were; 120 ppm, 47 ppm, and 30 ppm. Based on these results the TPH levels are below the Level II soil matrix cleanup standards for the site (diesel, 500 mg\kg).

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The treated soil was transported to Mr. Mann's property in Forest Grove on January 23, 1992, by Oregon Pacific Tank Services (OPTS). OPTS prepared a vicinity map and site plan of the final disposal site for this material. The Department received this information from Geotechnical Resources Incorporated (letter dated, April 24, 1992).

The Department requires the soil not to be placed in an area sensitive to groundwater, surface water, or wetlands impact and must be managed in a way to prevent human contact.

3. Groundwater was impacted in the "office building tank" excavation. Approximately 600 gallons of water was pumped from the excavation and disposed of off-site by Spencer Inc. Groundwater was not impacted in the "shop tank", and "transmission tank" excavations.

   A groundwater sample was collected from the "office building tank" excavation and analyzed for benzene, ethylbenzene, toluene, and xylene (BTEX). No BTEX was detected.

4. Confirmatory soil samples analyses determined a maximum of 250 ppm TPH remaining in the excavations this is below the level 2 limit of 500 ppm TPH (diesel) that was established for the site.

   No BTEX, or halogenated solvents were detected in the waste oil contaminated soil: 0.32 ppb polychlorinated biphenols, cadmium, and lead were detected. They were below current regulatory standards.

The Department's determination will not be applicable if new or undisclosed facts show that the cleanup does not comply with the referenced rules. The Department's determination also does not apply to any conditions at the site other than the release of the petroleum product specifically addressed in your report. We recommend that a copy of all information be maintained with the permanent facility records.

Please note that pursuant to OAR 340-122-360(2), a copy of your report must be retained until ten (10) years after the first transfer of the property.

Your efforts to comply with the regulations to ensure that your facility has been adequately cleaned up is appreciated. If you have any questions, please feel free to contact the Northwest Region UST cleanup section at (503) 229-5263.

Sincerely,

Virginia A. Esmond

Virginia A. Esmond
UST Cleanup Specialist
Northwest Region

cc: UST Cleanup Section, ECD
David D. Driscoll, P.E.
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